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ABSTRACT

Approximately 50 art activities for students in junior and senior high school are presented in this curriculum guide. Introductory sections define the roles of school superintendents, principals, art supervisors, and art teachers in supporting art programs, and outline goals and objectives of an art curriculum. The bulk of the guide consists of suggested art experiences in two-dimensional and three-dimensional techniques. Included in the two-dimensional techniques are activities related to elements of design (shape, color, texture), principles of arrangement (balance, harmony, contrast, movement), graphic representation, drawing, painting (watercolor, oil, acrylic, tempura, encaustic, sand, ink), print making (linoleum, wood block, silk screen), and photography. Among the three-dimensional techniques are activities in sculpturing, leathercraft, jewelry, lapidary art, ceramic art, and weaving. Other sections present miscellaneous activities such as decoupage and batik; review aspects of art programs for handicapped students; and list recipes, facility requirements, basic art equipment, supply sources, a glossary, and a bibliography. (AV)

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A VISUAL ARTS GUIDE
FOR IDAHO SCHOOLS
GRADES 7-12

IDAHO STATE DEPARTMENT OF EDUCATION
Division of Instructional Improvement

Prepared by
Statewide Visual Arts Curriculum Committee
May 1978

SO-011500

A. D. LUKE
Associate State Superintendent
Division of Instruction

ROY TRUBY
State Superintendent
of Public Instruction

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FOREWORD

It is a pleasure to endorse the publication of new guides in drama, dance and visual arts for Idaho schools. Developed by statewide committees of art educators, the guides should result in improved and expanded programs for Idaho children.

The arts provide many benefits. They spark classroom interest, improve morale and attendance, expand imagination and creativity, foster love of learning and increase the love and understanding of people in other cultures.

For these reasons, a quality fine arts program should be an important part of the curriculum of every Idaho school.

Sincere appreciation is expressed to the members of the committees for their assistance in writing the instructional materials.

Roy Truby
ROY TRUBY
State Superintendent
of Public Instruction

ACKNOWLEDGEMENTS

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INTRODUCTION

Visual art is an important factor in the life of every individual. For many adolescents the high school offers the last opportunity to be involved in an organized art program specifically designed for improving visual sensitivity. Visual art programs on the secondary level provide opportunities for the adolescent to develop to his fullest potential--mentally, emotionally, creatively, aesthetically, socially, and physically. These qualities will help develop individual concern for the kind of world in which he lives, and a perspective which cannot be derived from the academics alone. Education organized for the emotions, feelings, attitudes, and senses is a birthright of every American child. Therefore, visual art should be of major importance in the secondary curriculum in today's schools.

Numerous research studies prove that the arts contribute immeasurably toward other academic learning. Although some educators see art as "picture making", others are more aware of its importance in sharpening the student's sensory abilities. The arts release, develop, and redirect growth in a unique manner.

Adolescents are growing up in a vital and intriguing era. This "Age of Anxiety," as it has been called, is reflected by adolescents through their clothes, dances, and art activities. Visual art programs designed to channel their anxieties into creative experiences cannot be overlooked. All of the many facets of the adolescent's personality suggest curriculum directions that must be implemented if the needs of young people are to be met. The wise school administrator will view the visual art program as one of the most likely places for the adolescent to discover himself through creative involvement.

Today's adolescents are tomorrow's citizens. They will be responsible for creating art forms which reflect the nature of society. City planning, product and industrial design, interior and clothing design as well as sculpture, painting, ceramics, weaving, and related areas will be their responsibility. Added to these tasks will be their need to use leisure time wisely. Cultivation of these abilities can be achieved through involvement with creative activities in visual art.

A requirement for the offering of visual arts and other fine arts courses in all secondary schools in Idaho is found in the State Department of Education publication, Accreditation Standards and Procedures for Secondary Schools, 1977, p.5. Guides for instruction in Dance, Drama and Music are also published by the Department.

THE ROLE OF THE ADMINISTRATION

The Superintendent: As the leader of the school and the liason between school and community, the superintendent should provide and support an adequate visual art program as an integral part of general education in the school district.

He or she should work closely with the art supervisor, art teacher-specialists, and school principals in developing a flexible art program which meets the needs of the students.

He or she should select art teachers with proper certification and training, and provide adequate facilities and equipment.

He or she should provide time for art personnel to attend professional conferences and to participate in programs of inservice training.

The Principal: As the individual school leader, the principal should work closely with the art specialist to develop and improve art in the total program of his or her school.

He or she should encourage development of greater competencies in art through staff inservice training as well as establishing a non-threatening atmosphere conducive to freedom of expression of creative abilities.

He or she should be actively involved in the art activities in the school seeing that art has its rightful place in the total school program, and maintaining a schedule that allows time for art activities such as exhibits, field trips, and correlated learning experiences with other disciplines.

The Art Supervisor: As a cooperating resource person he or she should plan an art curriculum which is compatible with the total school program as expressed in the district's philosophy and goals.

He or she should be a professional person who develops support for the program through tact and respect in dealing with the members of the school community. Rapport with both students and educators is not only desirable, but a necessity. He or she should continuously analyze new methods and media, perform research into current trends in visual arts education, and transmit findings to both teachers and administrators by means of inservice workshops, bulletins, and direct verbal communication.

THE VISUAL ART TEACHER
OR ART DEPARTMENT HEAD

Since much of the success of the art program depends upon the art teacher, it is vitally important that he or she understands and has a sincere concern for youth. The preparation, personality, philosophy, general aptitude, and attitude of the teacher comprise the most significant elements of the teaching-learning situation. The effective art teacher thinks of the classroom as a learning laboratory in which to focus on the education of youth through creative art activities. The teacher must learn that merely engaging in the manipulative activities of crafts, painting, or sculpture does not necessarily lead to an understanding of art. The teacher should not mistake "busy work" for learning about art.

Technical ability and know-how are not sufficient unto themselves to help the students develop works of art. At best, the art teacher may be able to pass on to the students creative insights and principles which will help them develop their own ideas. The teacher must be an inspiring advisor who makes an effort to stay out of the students' experience and yet gives advice when it is needed. At the same time, it is important that the teacher refrain from stifling the students by emphasizing his or her own likes and dislikes and styles of work. The art teacher must help to unlock the hidden possibilities and talents within the students. The art teacher must be responsible for establishing the direction and development of the curriculum, and must have a broad knowledge of what is being taught and why.

More and more, art teachers are maintaining an intense interest in the development of their own art expression. The good teacher should develop his or her own creative art form as a part of the teaching function. Although this does not necessarily mean that the teacher must compete with professional artists, it does mean that he or she must be dedicated to creative art activity as an individual. This will demonstrate to the students that the teacher has a strong interest in aesthetics and in promoting art throughout the school and community.

It is necessary that the art teacher have a good relationship with his co-workers and be willing to cooperate in matters where the visual arts are concerned. The areas where this may be necessary are student exhibits in school and community; and art projects such as logos, murals, window decorations, posters, bulletin boards, and accessories to the other fine arts activities. Every art teacher has a responsibility to not only to his or her students but to fellow teachers, the administration, and the public in helping to make art a respected and vital part of the school program. He or she must be interested in helping parents understand the school art program as well as the importance of aesthetics in enriching life.

Another important phase of the art teacher's job is to be sensitive to all possibilities for developing awareness in the students. It is in this area that the art teacher may find his or her greatest challenge--that of helping the students understand the unique qualities inherent in sensitive observation as well as the ability to feel deeply with all of the senses. A heightened sense of perception is especially important to the development of the students' ability to create.

Even though the life of the teacher is a busy one, he or she should schedule time for professional reading and participation in the activities of professional art groups. There is a constant need for contact with members of that teacher's own profession. These contacts are often provided through inservice meetings offered by the State Department of Education, national and regional art associations, and through state and local groups.

A VISUAL ARTS GUIDE FOR IDAHO SCHOOLS

GRADES 7-12

GOALS AND OBJECTIVES

GOALS:

1. To provide a usable, practical course of action for the teachers to use in art education.
2. To provide a series of art experiences which will enable the student to:
   - see and feel visual relationships.
   - become visually literate.
   - produce and exhibit works of art.
   - know and understand art objects.
   - evaluate art objects.
3. To establish and maintain continuity in scope and sequence of the art education process.

OBJECTIVES:

The student shall:

1. Learn and use the elements and principles of design.
2. Understand the use of tools and media.
3. Utilize and be sensitive to the principles of good craftsmanship.
4. Develop and expand his/her creativity.
5. Develop an appreciation for all art forms.

EXPERIENCES
TWO DIMENSIONAL ART
ELEMENTS OF DESIGN

LINE

Definition:

A line is a continuous mark, longer in length than breadth, made by pencil, brush or crayon, and forming an element of design as opposed to shading or color. It can be straight, crooked, skinny, fat, dark, light, positive, negative, fuzzy, dotted, imaginary, or wrinkled.

Objective:

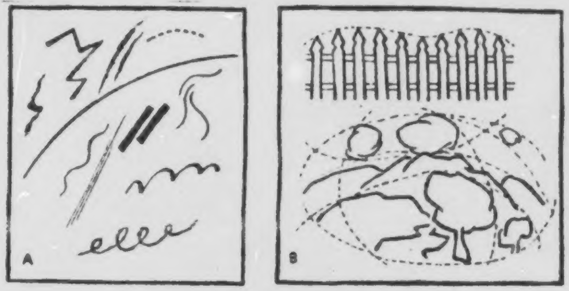
To acquaint the student with variations of a line.

Materials Needed:

Pencil, paper, ink, pens, brushes, sticks (sharpened or pulped).

Experiences:

A. Basic Line Exercise:



B. Scribble Design:

1. Begin with teacher showing students how a continuous line crossing and recrossing can create shapes and ultimately design.
2. The student draws with pencil an unbroken line which covers an entire sheet of paper. When these areas are completed he is to fill it with lights and darks made by his pencil.

References:

Art Structure, Henry N. Rasmusen, McGraw-Hill Book Co., N.Y., N.Y.

All About Art, Rachel Baker, Fine Arts Publications, Inc., New Haven, Conn.

SHAPE

Definition:

A. A shape is born when a line meets itself and has length and width. It may be geometric or free form in dimension.

B. Shapes may be either positive or negative. A positive shape is one that has meaning by its two dimensions and negative shapes are background or arid areas.

Objectives:

A. The student should understand how shapes are created by joining lines together.

B. The student should be able to create both positive and negative shapes.

Materials Needed:

Black construction paper, colored tissue.

Experiences:

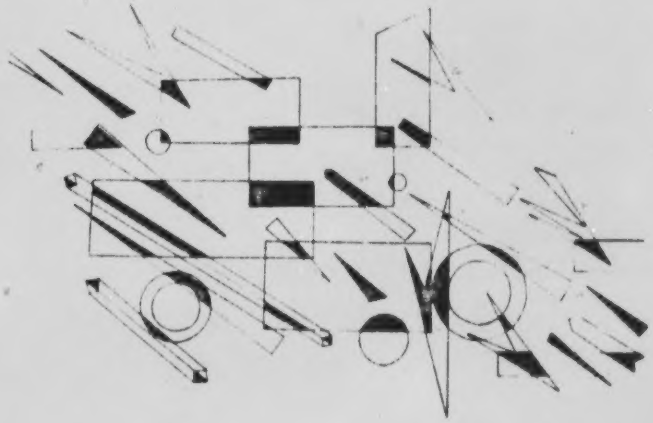
A. The teacher should demonstrate the mechanics involved in creating a stained glass window.

The following steps are necessary:

1. Design shapes in pencil on scratch paper--these shapes will show the leaded areas of the windows.
2. Add essential elements of color, texture, and value.
3. Cut out black construction paper showing the leaded areas.
4. Glue an appropriate color behind these areas.

B. The teacher should be sure to carefully explain the use of both positive and negative shapes used in the creation of the window design.

C. The student will create his own stained glass window.



References:

Art Structure, Henry N. Rasumsen, McGraw-Hill Book Co., N.Y., N.Y..

All About Art, Rachel Baker, Fine Arts Publications, Inc., New Haven, Conn.

FORM

Definition:

One of the elements of design which is involved with solid masses and shapes, or their representation, and has the quality of being three dimensional.

Objectives:

A. The student should become aware of the differences between a shape and a form.

B. The student should be able to create forms from shapes.

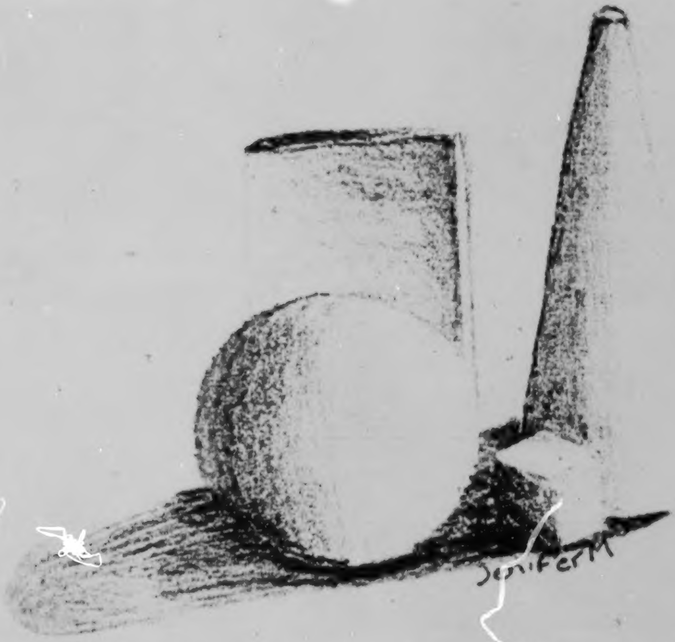
Materials Needed:

Paper, pencil, pen, ink, cube, rectangle, sphere, cone and cylinder.

Experiences:

A. The teacher should demonstrate changing a shape into a form, using the models found in the materials list.

B. The student should draw the model first as a shape and then as a form using only lines.



FORM

References:

Art Structure, Henry N. Rasmusen, McGraw-Hill Book Co., N.Y. N.Y.

All About Art, Rachel Baker, Fine Arts Publications, Inc., New Haven, Conn.

VALUE

Definition:

The lightness or darkness of a color.

Objectives:

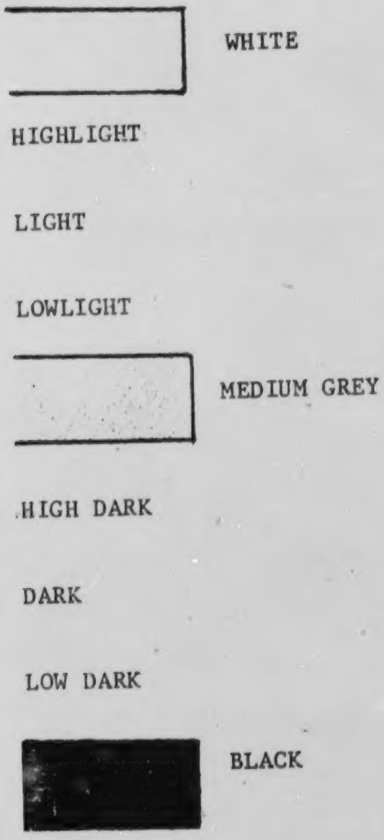
- A. To help the student become aware of value gradations (contrast of light and dark).
- B. To help the student realize the importance of contrast in works of art.

Materials Needed:

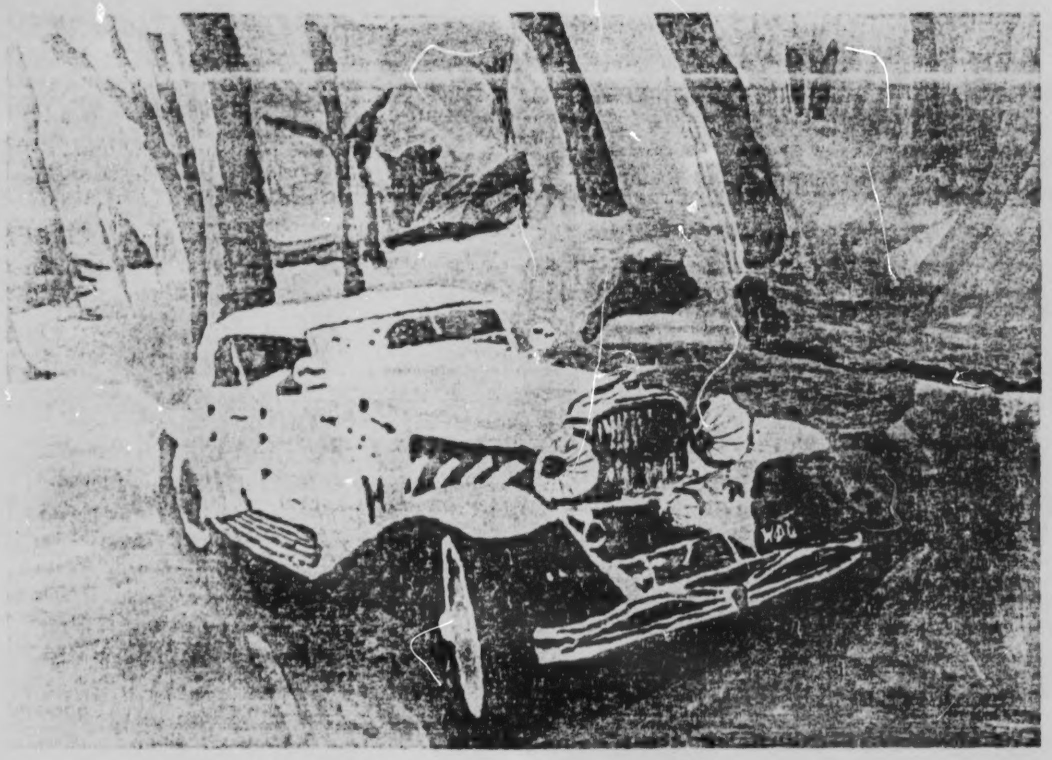
Paper, pencil, brush and paint.

Experiences:

- A. Teacher gives the class an explanation of value scale and shows examples.
- B. The student is to create a value scale using a number of gradations ranging from black to white.
- C. The student is to produce a design or drawing showing the importance value plays in a composition, using either pencil or paint.


WHITE
HIGHLIGHT
LIGHT
LOWLIGHT
MEDIUM GREY
HIGH DARK
DARK
LOW DARK
BLACK

VALUE



VALUE

References:

Art Structure, Henry N. Rasmusen, McGraw-Hill Book Co., N.Y. N.Y.

All About Art, Rachel Baker, Fine Arts Publications, Inc., New Haven, Conn.

COLOR

Definition:

- A. Color is an element contained within light.
- B. Additive colors are colors still contained in light. These mixed become lighter and brighter or increased in intensity.
- C. Subtractive colors are colors contained in pigment and dyes. These mixed are darker and duller or lower in intensity.
- D. Neutrals are black, white, or mixtures of these.
- E. Hue is color as shown on the color wheel and also another name for the word color.
- F. Intensity (chroma) is the brightness or dullness of a color. To decrease a color's intensity, add its complement, black or white.
- G. Primary colors are yellow, red and blue.
- H. Secondary colors are orange, violet and green.
- I. Intermediate colors are a mixture of a primary color with a neighboring secondary color.
- J. Tertiary color is a mixture of any two adjacent secondary colors.
- K. Color Harmonies:
  - 1. Monochromatic refers to the tints and shades of the same hue.
  - 2. Analagous refers to the number of colors found adjacent to each other on the color wheel such as yellow, yellow green, green, blue green, and blue. There are only three of these on the color wheel.
  - 3. Triadic refers to colors which are found at the points of an equilateral triangle within the color wheel.
- L. Warm colors are colors which indicate their warmth by the use of red, yellow and orange pigment.

Objectives:

- A. The student should become acquainted with the relationship one color has to another in order to gain the skills needed to produce color variations.
- B. The student should become acquainted with the color variation and the reaction of neutrals with color. The student will also develop the physical skills necessary in handling paint needed to complete these exercises.

C. The student should create the three color harmonies.

Materials Needed:

Tempera paints in the primary colors, brushes, paper, rulers and pencils.

Experiences:

A. The student should produce a twelve-hue-color scale (wheel, if you wish) showing equal steps of color hue using the three primary colors only. This scale or wheel should be labeled as to primary, secondary, and intermediate triads.

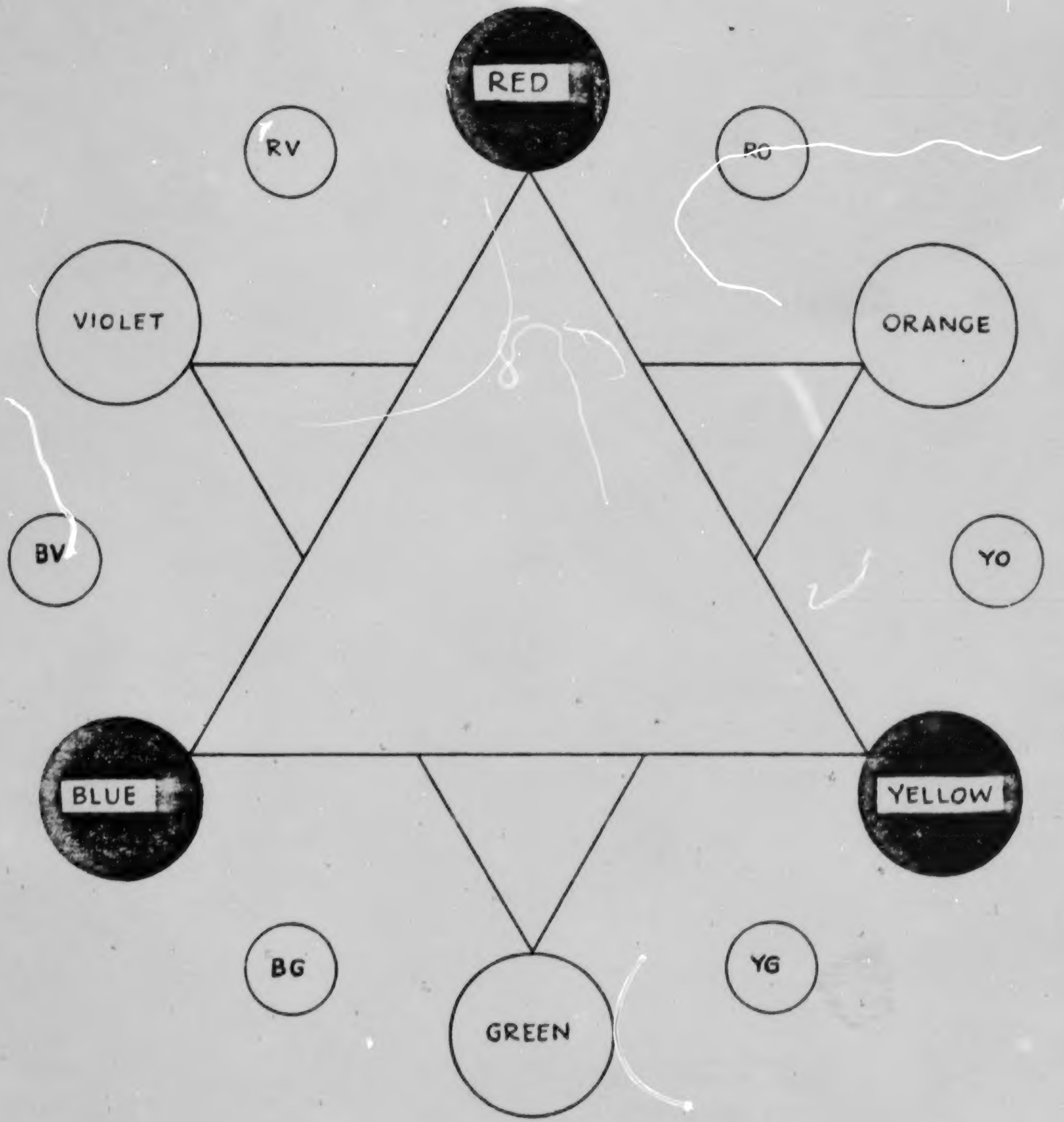
B. The student should produce an intensity-value chart. He is first to mix a seven-tone-intensity scale with complementary colors on both ends, mixing toward a neutral in the center. Each tone on the preceding scale is then to be mixed with three shades of black and three tints of white to illustrate value differences.

C. The student can create three good, simple shape designs and will color each with the correct colors of the four color harmonies, monochromatic, analagous, complementary and triadic.

References:

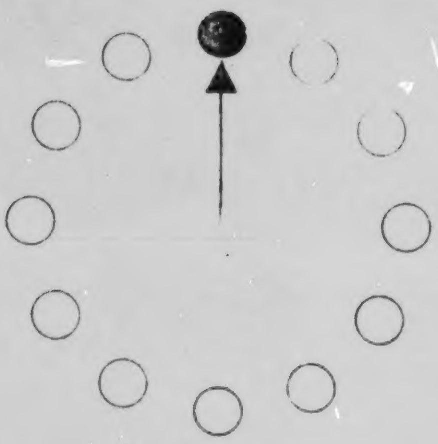
All About Art, Rachel Baker, Fine Arts Publications, New Haven, Conn.

Art Structure, Henry N. Rasmusen, McGraw-Hill Book Co., N.Y., N.Y.

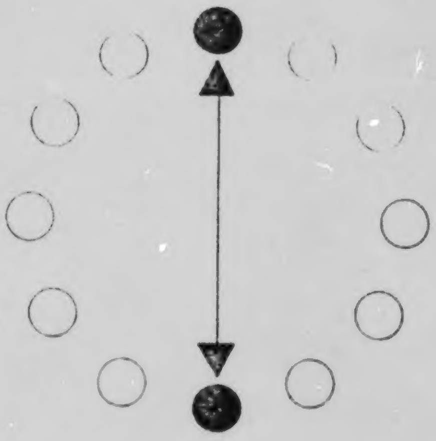

RED
RV
RO
VIOLET
ORANGE
BV
YO
BLUE
YELLOW
BG
YG
GREEN

Color Wheel

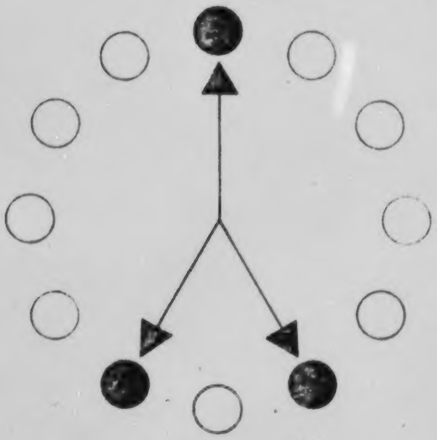
COLOR



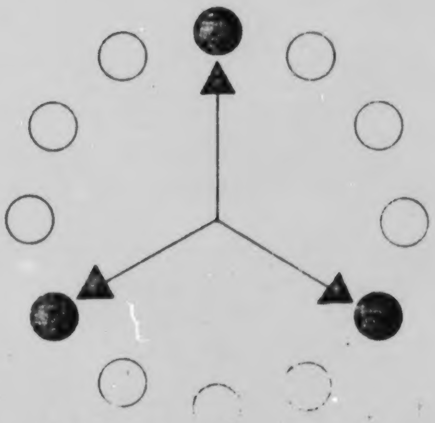
Monochromatic



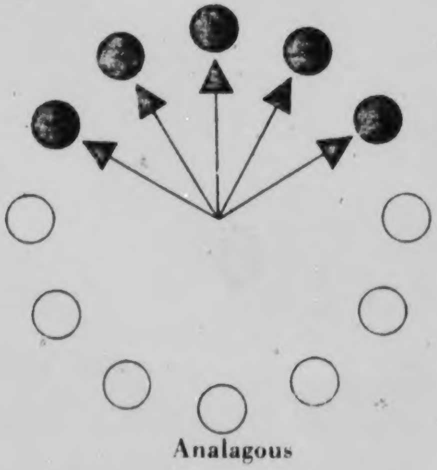
Complement



Split Complement



Triad



Analagous

TEXTURE

Definition:

The actual roughness or smoothness of a surface or the illusion of roughness or smoothness through pattern.

Objectives:

A. The student should become aware of the aesthetic value of texture.

B. The student should explore texture and pattern and learn how they relate to a given shape.

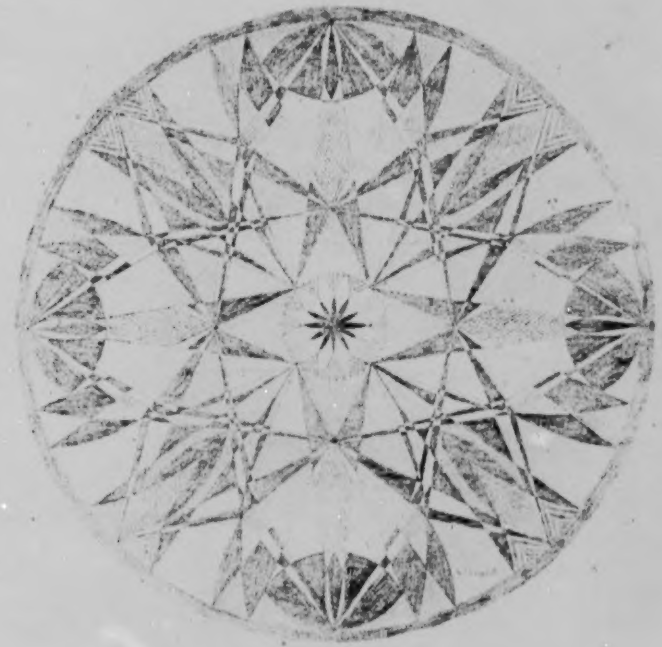
Materials:

A. Pencil and paper or pen and ink and paper. (Experience in both would be helpful.)

B. Textured surfaces.

Experiences:

The student is to fill a sheet of paper with interesting shapes. The shapes should vary from curvilinear to angular. Each shape is then to be filled in with an innovative texture and pattern by direct markings or rubbings.



TEXTURE

Reference:

Art Structure, Henry N. Rasmusen, McGGraw-Hill Book Co., N.Y. N.Y.

EXPERIENCES
TWO DIMENSIONAL ART
PRINCIPLES OF ARRANGEMENT

BALANCE

Definition:

Equilibrium as established by harmonious arrangement. The kinds are formal or symmetrical and informal or asymmetrical.

Objectives:

A. The student should become aware of the kinds of balance and implement them in compositions.

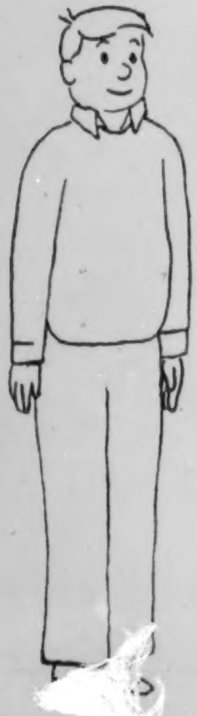
B. The student should be aware that balance may be obtained by utilizing the elements: line, shape, form, color, texture and value.

Materials Needed:

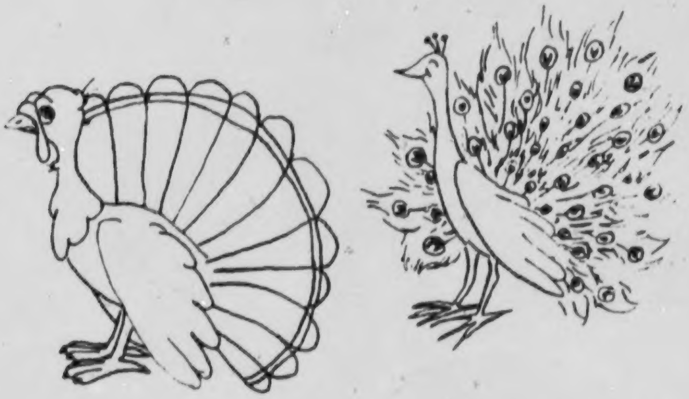
Paper, pencil, pen and ink, colored pencils or crayons.

Experiences:

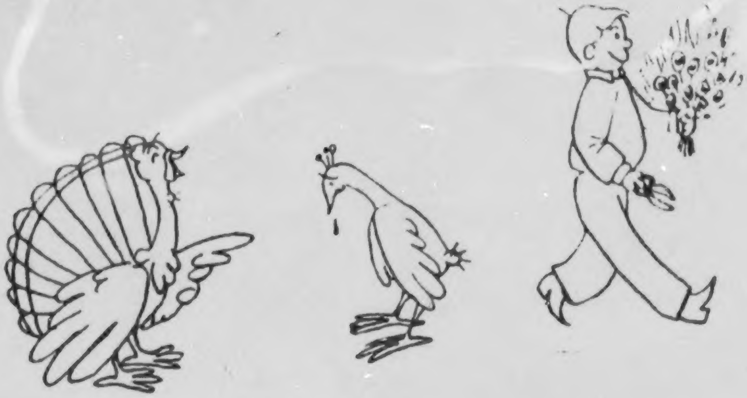
A. The teacher should demonstrate the principles of balance by using cartoon figures. In doing this, he or she could include a little about the art of cartooning.



CREATED CARTOON
CHARACTER #1

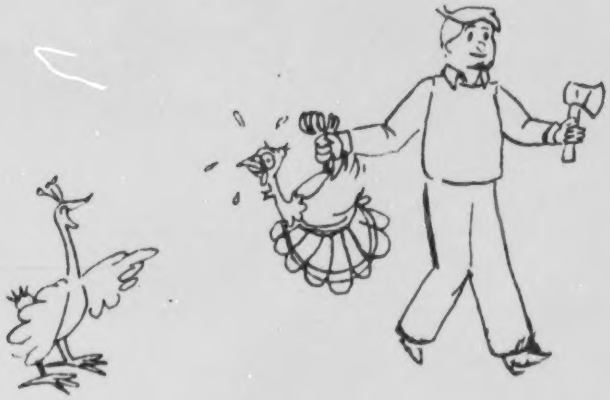


CREATED CARTOON
CHARACTERS #2



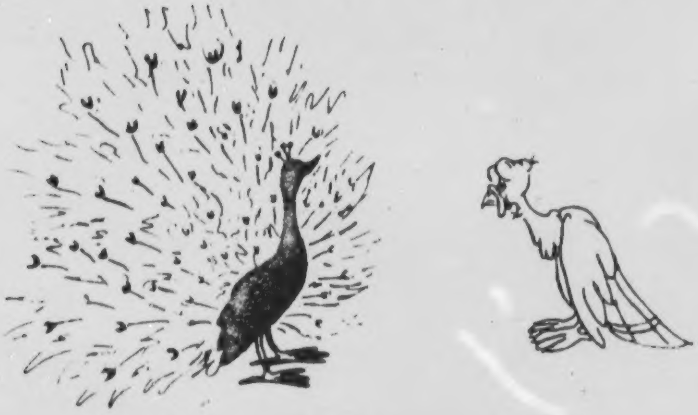
CARTOON 1

FORMAL BALANCE



CARTOON 2

INFORMAL BALANCE



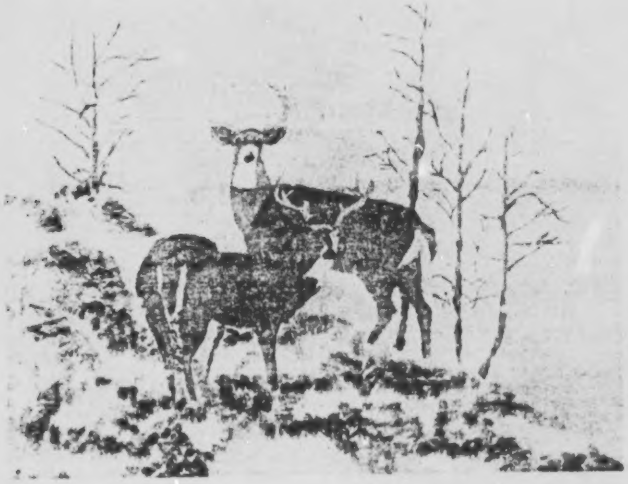
CARTOON 3

VISUAL BALANCE

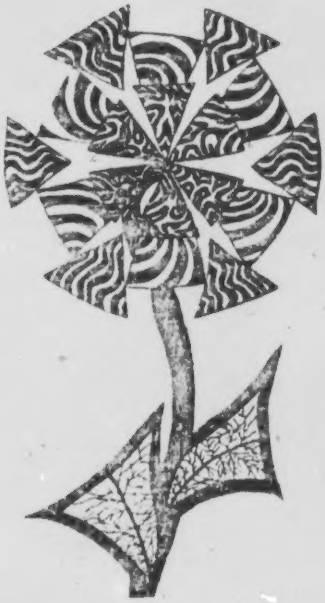
(Smallest character colored brilliantly to balance larger character in neutral colors.)

B. The student should create two cartoon figures and draw them in three correctly balanced compositions, illustrating the three kinds of balance. (See Cartoon Illustrations)

C. The student should be encouraged to do a drawing showing clearly formal and informal balance.



FORMAL BALANCE



INFORMAL BALANCE

References:

Art Structure, Henry N. Rasmusen, McGraw-Hill Book Co., N.Y., N.Y.

Principles of Design - Balance and Unity, George F. Horn, Davis Publications, Massachusetts.

HARMONY

Definition:

A state of "visual rightness" and compatibility between colors or other parts of a composition giving the effect of a pleasing whole.

Objective:

The student should become aware that harmony is created by the skillful arrangement of similar elements.

Materials Needed:

Colored construction paper, colored tissue, glue, scissors, poster or tag board, fiber point water base markers.

Experiences:

A. The teacher should demonstrate how the elements of design and principles of arrangement may be utilized to create a harmonious composition. The following steps are recommended:
   1. Determine size and cut tag board or poster board.
   2. Cut or tear interesting shapes and different sizes of colored construction or tissue paper.
   3. Arrange these on tag or poster board until they are in harmony with one another.
   4. Fiber markers may also be used to tie areas together.

B. The student should create his own harmonious composition.

Reference:

All About Art, Rachel Baker, Fine Arts Publications, Inc., New Haven, Conn.

CONTRAST

Definition:

The opposition or unlikeness of things compared--an aspect of variety.

Objectives:

A. The student should become aware of the use of contrast as a means of giving special emphasis within a composition.

B. The student should understand that contrast may be achieved by varying the elements of design.

Materials Needed:

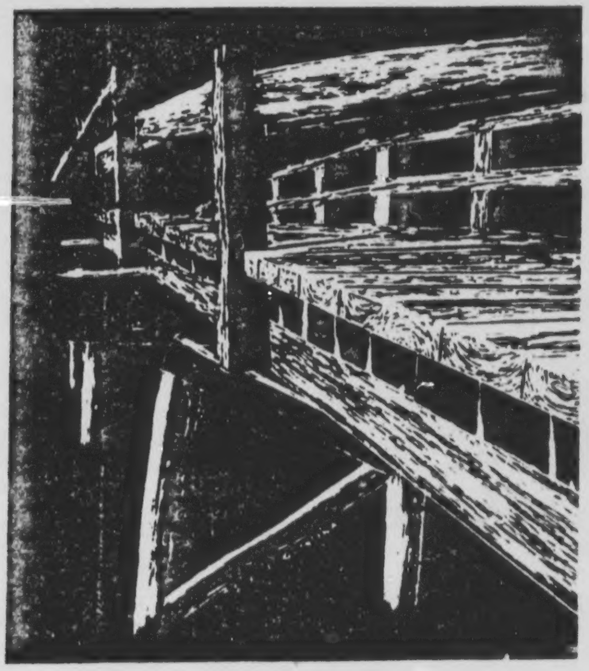
Paper, pencil, pen, tempera paint, scrap materials, scissors, glue, brushes, ink.

Experiences:

A. The teacher should explain and demonstrate contrasts by varying the elements of design.

B. The students should create projects showing contrasts with the following elements:

1. Line - straight versus curved.
2. Color - complementary colors.
3. Form - geometric versus free form. (3 dimensional)
4. Texture - rough versus soft; rough versus smooth.
5. Value - light versus dark.
6. Shape - geometric versus organic (2 dimensional)



VALUE CONTRAST

Reference:

Design Elements and Principles, Davis Publications, Inc., Worcester, Massachusetts.

DOMINANCE AND SUBORDINATION:

Definition:

A. Dominance in a composition is the element which is the most expressive.

B. Subordination in a composition is the less important element and is a by-product of dominance.

Objectives:

A. The student should learn to develop centers of interest by using dominance and subordination in his/her composition.

B. The student should learn how to place these centers of interest to create a good composition.

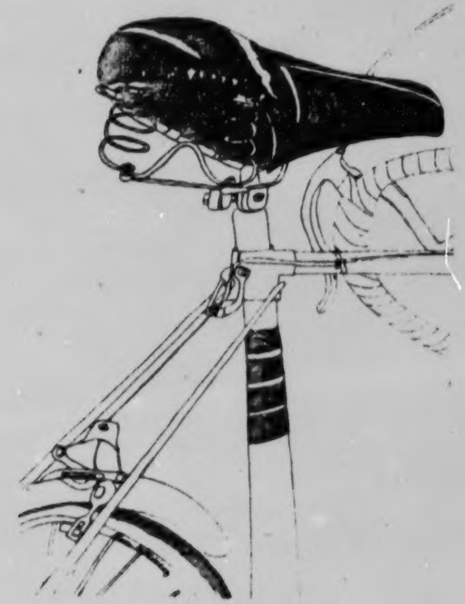
Materials Needed:

Paper, pencil, tempera paint, scraps, glue, scissors, brushes.

Experiences:

A. The teacher should illustrate development of eye-catching devices to show dominance.

B. The student should develop graphic examples of dominance by using the elements--line, form, texture, color, and value. For example: The student should create a target with a bull's-eye (center of interest). This can be created not only through line and shape, but also by color, value and texture.



DOMINANCE

Reference:

Principles of Design Emphasis, Joseph A. Gatto, Davis Publications, Inc., Worcester, Massachusetts.

MOVEMENT

Definition:

The use of art elements and principles of arrangement so as to cause the eye to travel in a certain direction within the composition.

Objectives:

A. The student should be aware of how art elements and principles of arrangement can be used to control the direction and movement of the eye of the viewer.

B. The student should develop techniques of controlling the eye movement of the viewer within his/her composition.

Materials Needed:

Pencil, paper, crayon.

Experiences:

A. The teacher should show the students a series of examples with tissue overlay showing how the eye movement is controlled within good composition by the use of the art elements and principles of arrangement.

B. The student should create by line drawings or crayon renderings examples of controlling eye movement within a good composition by use of the art elements and principles of arrangement.

Reference:

Design: Elements and Principles, Dorothy C. Malcom, Davis Publications, Inc., Worcester, Massachusetts.

UNITY

Definition:

That which pulls together all of the principles of arrangement and the elements of design into a unified whole.

Objective:

The student should be made aware that unity is the ultimate end of a good composition.

Materials Needed:

Chalkboard, tissue, a recognized masterpiece, chalk, waterbase marker.

Experiences:

A. The teacher may explain unity by either a chalkboard drawing or by a tissue overlay analysis of a recognized masterpiece. She should be sure to point out how the elements of design and the principles of arrangement are treated to create a unified composition.

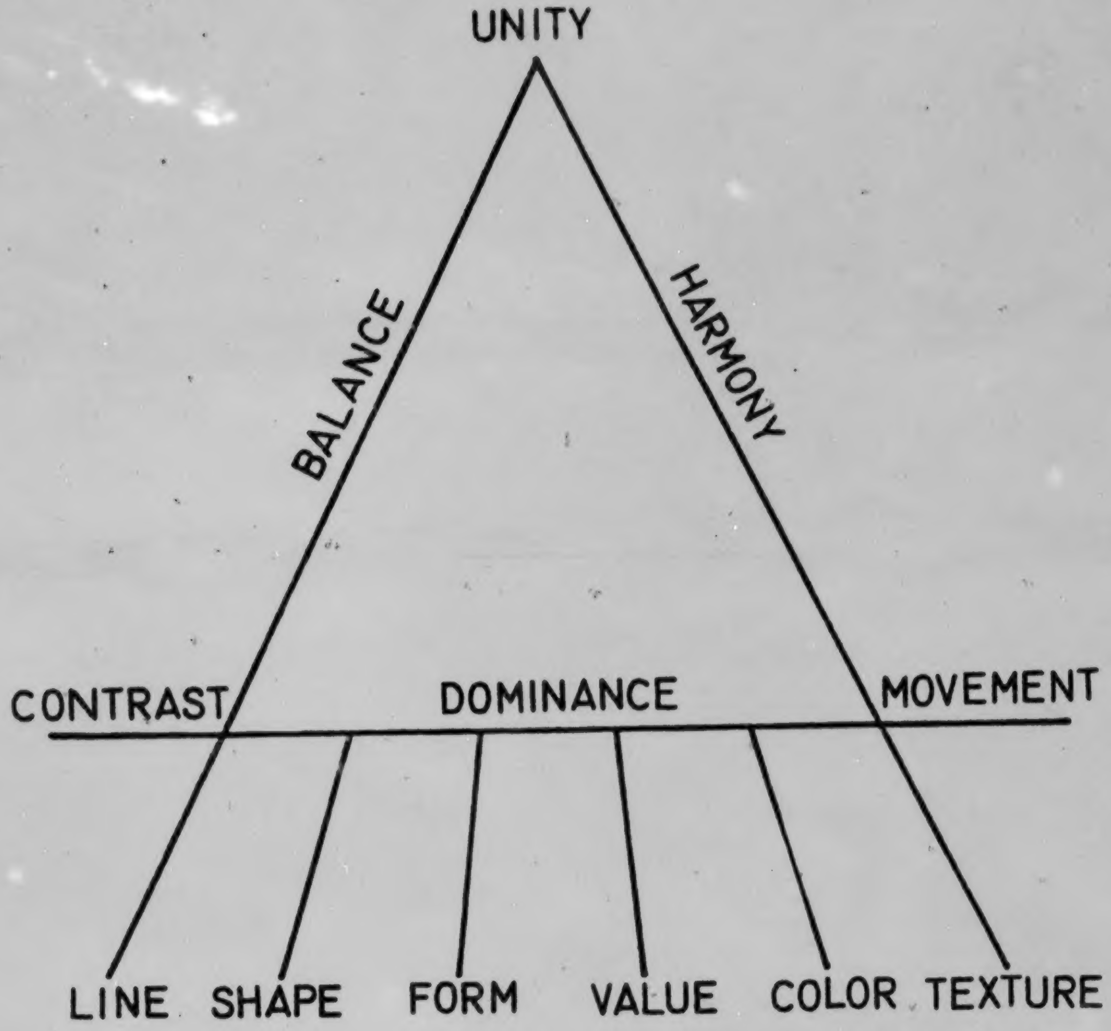
B. The student should create a finished composition and or thumbnail sketches in which all of the elements and principles can be found.

C. The student with the teacher should critique these compositions by tissue overlay.

Reference:

Principles of Design - Balance and Unity, George F. Horn, Davis Publications, Inc., Worcester, Massachusetts.

Principles of Arrangement


UNITY
BALANCE
HARMONY
CONTRAST
DOMINANCE
MOVEMENT
LINE
SHAPE
FORM
VALUE
COLOR
TEXTURE

Elements of Design

32

EXPERIENCES
TWO DIMENSIONAL ART
DRAWING

DRAWING (TOOLS)

Definition:

The act of creating a picture by means of an arrangement of lines and values made with a marking instrument such as a pencil, crayon, charcoal, pen, or brush. Also a name given to pictures so created.

Objective:

The student should be able to identify and manipulate the materials and tools needed for drawing. These may include different kinds and weights of paper, kinds of rigid marking instruments, erasers, brushes, and inks.

Materials Needed:

Different kinds and weights of paper, erasers, brushes, rigid marking instruments, and inks.

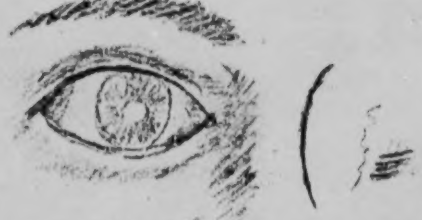
Experiences:

A. The student should have the opportunity to explore, and to manipulate a variety of drawing instruments and surfaces through simple exercises such as the one shown below:

B. The student should use different kinds of drawing pencils and different kinds of paper whose surfaces and weights vary and should correct these with different kinds of erasers such as kneadable, art gum and pearl.

C. The student should be guided in learning to use different kinds of pens and inks in drawing.

D. The student should have experience with bamboo brushes such as those used in the Sumi technique of Oriental drawing.



Charcoal Pencil

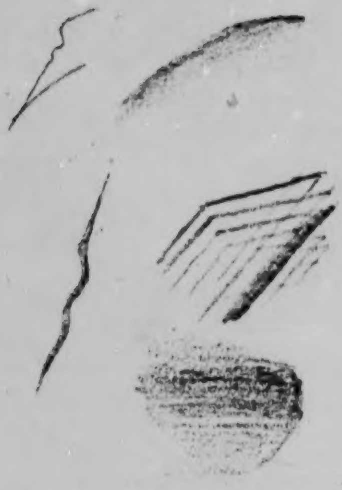


Figure 1. Pencil

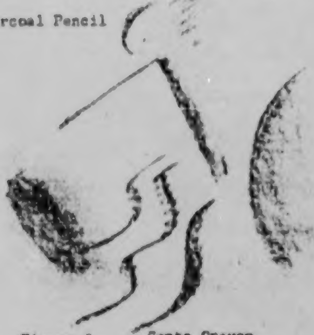


Figure 2. Conte Crayon

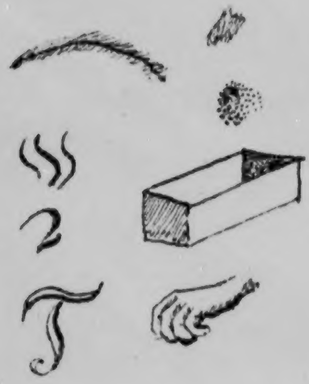


Figure 3. Pen and Ink

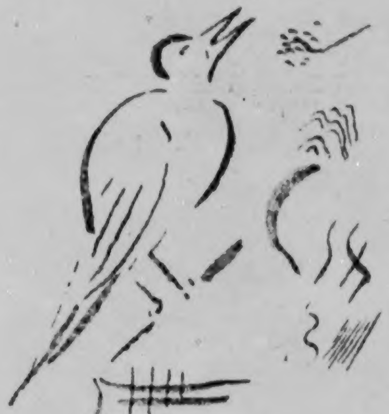


Figure 4. Sumi-Bamboo Brush

E. The student should do one or more drawings using any of the above mentioned tools.

References:

The Art of Drawing, M. Grumbacher, Inc., New York, N.Y.

Rendering in Pencil, Arthur Guptill, Watson Guptill Publications, New York.

The Art of Pencil Drawing, Ernest Watson, Watson Guptill Publications, New York.

DRAWING (TECHNIQUES)

Definition:

The act of creating a picture using a variety of methods to develop action, motion and emphasis.

Objectives:

A. The student should be aware of contour, gesture and thrust techniques in drawing.

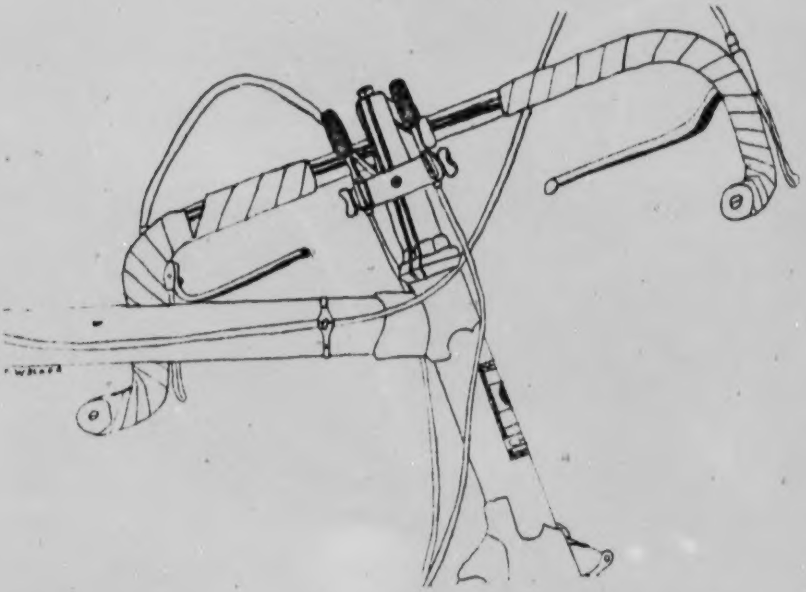
B. The student should develop skills in contour, gesture and thrust drawing techniques.

Materials Needed:

Paper, rigid marking instruments, brushes, erasers and inks.

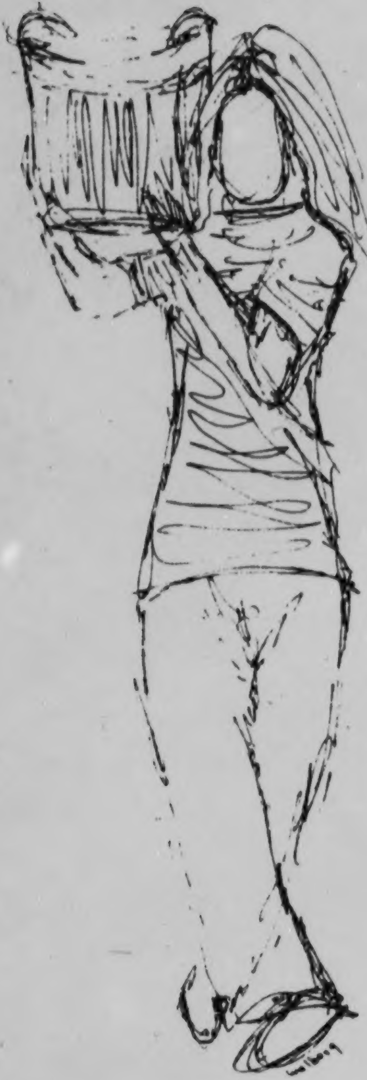
Experiences:

The student should have the experience of doing a contour, gesture and thrust drawing.

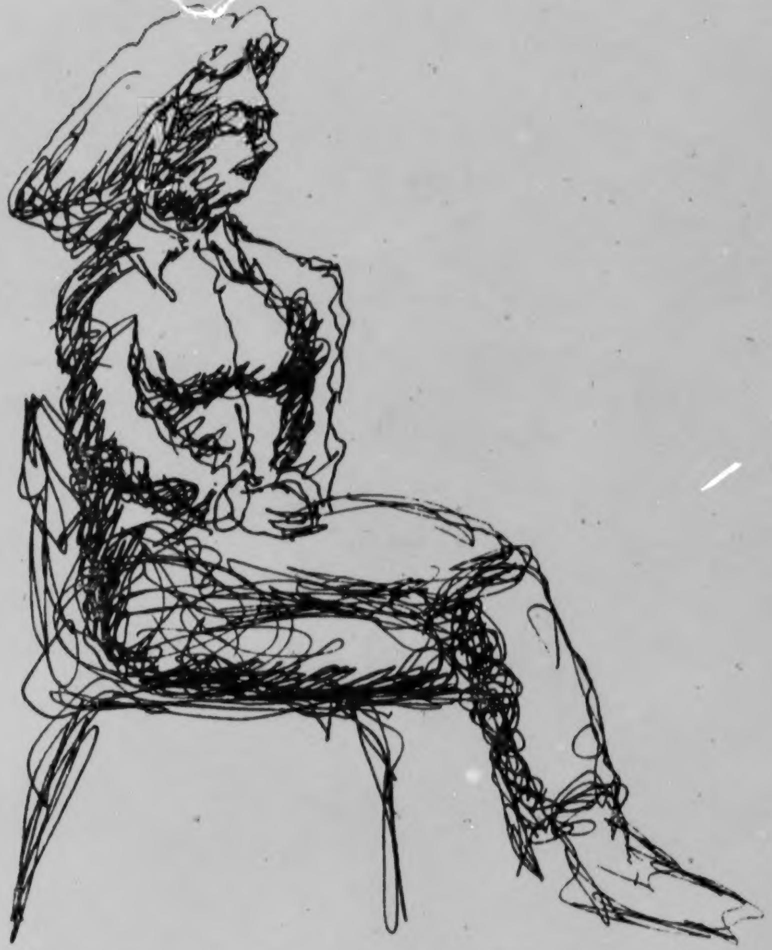


CONTOUR

Touching the edges of the subject in line drawing.



GESTURE - feeling the movement
in the model.



THRUST - The act of thrusting with the marker
to create a modeling effect.

Reference:

A Natural Way to Draw, Neicolaidez, Houghton-Mifflin Co., Boston, Massachusetts.

DRAWING (FORM)

Definition:

The act of creating form by arrangement of lines and values made with a marking instrument.

Objective:

The student should become aware of how important it is to stop, look and listen when developing his visual perception and drawing skills. The student should draw what he sees--not what he thinks he sees.

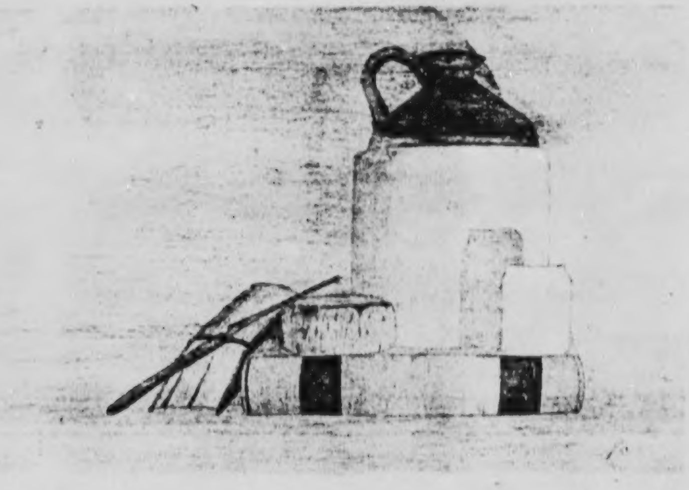
Materials Needed:

Paper, pencil (No. HB, 2B and 5B are recommended) and a kneadable eraser.

Experiences:

A. The student with close teacher supervision should do a series of pencil drawings. The order of these may vary but should include all forms, such as rectangle, cone, sphere and cylinder. These should be drawn under a light source, showing good perspective and a wide value scale.

B. The student should do a still life pencil drawing as a final study for this experience.



FORM

STILL LIFE DRAWING

References:

The Art of Drawing, M. Grumbacher, Inc., N.Y., N.Y.

Rendering in Pencil, Arthur Guptill, Watson Guptill Publications, New York, N.Y.

The Art of Pencil Drawing, Ernest Watson, Watson Guptill Publicatons,

DRAWING (PERSPECTIVE)

Definition:

The act of showing depth by use of line (linear perspective) or by changing value, color, texture, and size (aerial perspective).

Objective:

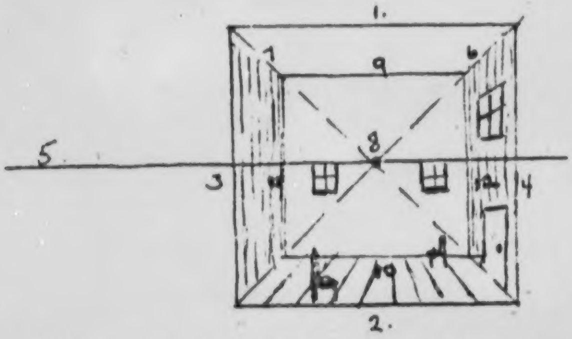
The student should become familiar with one and two point linear perspective and principles of aerial perspective.

Materials Needed:

A variety of paper, pencils, erasures, and straight edges.

Experiences:

A. The teacher should demonstrate on the blackboard the techniques of giving depth to a two dimensional plane. (See illustration below.)



1-2	top and bottom front plane lines
3-4	side front plane lines
5	horizon line
6-7	vanishing point lines
8	vanishing point
9-10	top and bottom back plane lines
11-12	side back plane lines

B. The teacher should provide a number of paintings, prints and drawings which clearly show the front and back planes and have the students' identify them.

C. The students final experience would be to create a finished pencil drawing of their choice, showing one and two point linear perspective. A street scene, a seascape with a dock or a scene containing buildings would be good here.

Reference:

Perspective Drawing - Free Hand and Mechanical, Joseph Hull, University of California Press, Berkeley, California.

DRAWING (TEXTURE)

Definition:

The act of creating texture by arrangement of lines and values made with a marking instrument.

Objective:

The student should complete drawings with various textures.

Materials Needed:

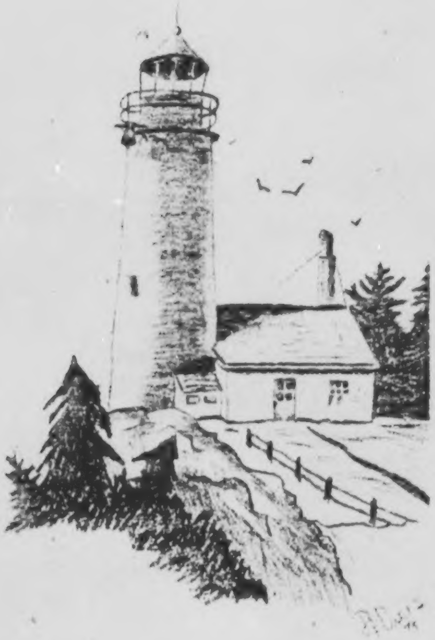
Paper, pencil, charcoal, pen, ink, chalk, and erasers.

Experiences:

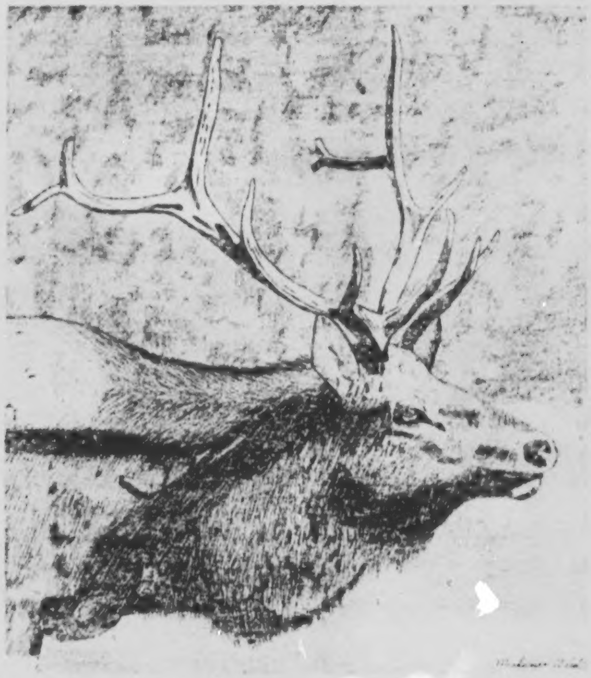
A. The student should do some finished drawings which would help him or her become aware of the beautiful textures in nature. These drawings could contain textures of his own choosing.

B. The student should also draw studies in the following areas: mountains, water (rough and smooth), rocks and trees, including lollipop, drooper, conifer and palm.

C. As a final experience, the student should do a finished landscape drawing being careful to use good forms, good value scale, and good perspective in forms and flat planes. He or she should also be careful that his textures in nature are believable.



Texture in Landscape Drawing



Texture

Reference:

"Design is a Dandelion," Filmstrip and Record, Boise State University Resource Center.

DRAWING (LIFE)

Definition:

A drawing representing parts or all of the human body.

Objective:

The student should experience life drawing.

Materials Needed:

Paper, pencils, erasers.

Experiences:

A. The teacher should explain the various units which will be involved in life drawing, including human hands, feet, bodies, and faces.

B. The student should draw the four positions of the human hand; back, fist, window and palm.

C. The student should draw at least two positions of the human foot; bare and in a shoe.

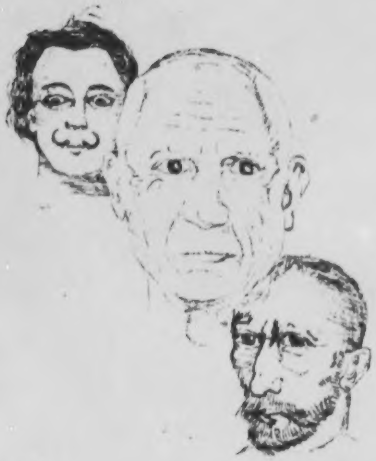
D. The teacher should demonstrate and have the students draw the proportions of the human body.

E. The teacher should demonstrate and have the students draw the proportions of the human face.

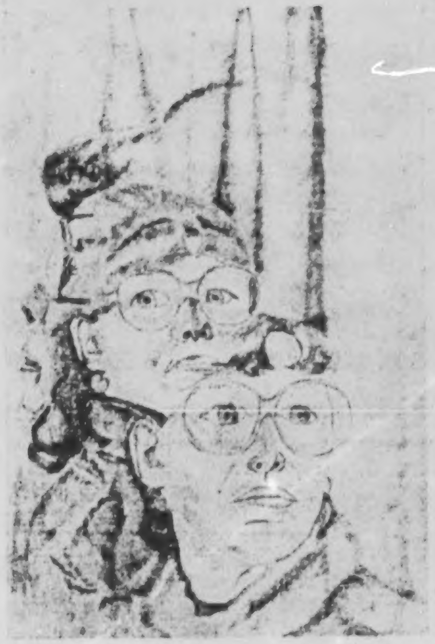
F. The teacher should demonstrate how to draw a human eye, a nose, an ear, and a mouth.

G. The students final experience should be to do a portrait and a human figure in pencil.

Note: This unit can be dove-tailed with the painting unit, using the pencil drawings as first drafts of acrylic or oil paintings of the same.



Portrait - Pen and Ink



Portrait - Pencil and
Charcoal Pencil

References:

The Art of Drawing, The Art of Drawing Trees, The Art of Drawing Heads and Hands, The Art of Drawing Animals, and The Art of Drawing with Pencil, Pen and Brush, M. Grumbacher, Inc., 460 West 34th Street, N.Y., N.Y.

PAINTING

Definition:

Creating a work of art with the use of paint in various forms.

Objectives:

A. To acquaint the student with the three major painting medias, and the brushes and other tools necessary.

B. To give the student experience in all three media.

C. To give the student experience in the various fields of expression, such as life, both human and animal; still life, landscape, seascape, non-objective and abstract.

Materials Needed:

Oil paints and proper brushes; acrylic paints; water colors and proper brushes; tempora paints, palette pad paper or palettes; palette knives, turpentine, containers for liquids, water color paper and canvas (either canvesette pads, canvas boards or regular cotton canvas either predressed or stretched and gessoed), old drawing boards for stretching water color paper and water base tape (old package tape).

Experiences:

A. Watercolor

1. The teacher could first show the slides recommended in the references or some others of equal worth.
2. The teacher could explain about the proper brushes for the media, the use of the water color palette, and how to handle the stretching of water color paper.
3. The students could draw a simple cylinder with a definite light source on a small piece of water color paper and carefully establish the value scale. The scale could include numbers 1, 2, 3, and 4 values. Number one is the paper, white; number two is next to white; number three is next to dark; and number four is dark.
4. Suggested final experience for the student is to copy a good water color painting which is painted for them either by the teacher, step by step, or by a series of slides as Rex Brandt does in the recommended set of slides found in the references.

B. Oil Painting

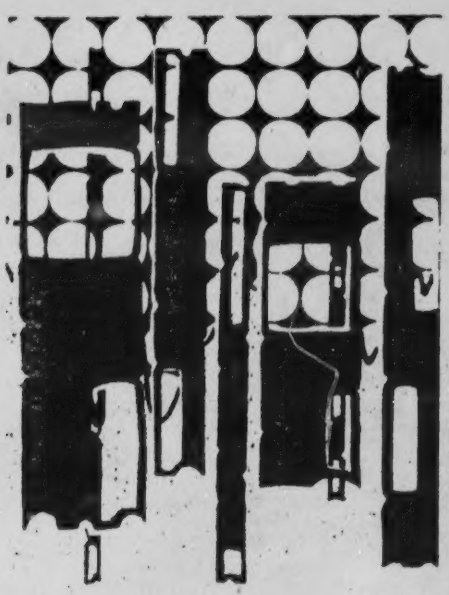
1. The correct brushes should be shown and explained. A good white bristle square. number 4; and a sable number 2 are all a beginning a painter needs.
2. The correct mixing procedure should be demonstrated with a palette knife on either palette paper or on a wooden palette, and the use of linseed oil and turpenoid explained.
3. The student could select a photograph which pleases them, either of a landscape, portrait or an animal and proceed to do a light sketch on the canvas of their choice.
4. The teacher should review all of the drawing techniques already learned. These are directly applicable to painting.
5. The final experience should be a finished oil painting no smaller than 16" x 20".

C. Acrylic Painting

1. The correct brushes should be shown and explained. The same brushes as for oil painting work well.
2. The correct color mixing procedure should be reviewed and the use of water with this medium be explained. It should be emphasized the fast drying quality of the medium and the use of drying retardants explained.
3. The student could first create in pencil an abstract design and use acrylic as the media to do a finished painting.
4. The painting should be no smaller than 16" x 20".

D. Tempera Painting

1. The student or students could create a good large non-objective design on butcher paper, no smaller than 30" x 36". This project works well with small groups of three or four students.
2. The non-objective design should be painted with tempera.
3. The finished painting should be titled and hung in a large room, such as a school cafeteria, for the entire student body to see.



NON-OBJECTIVE TEMPERA

E. Encaustic Painting

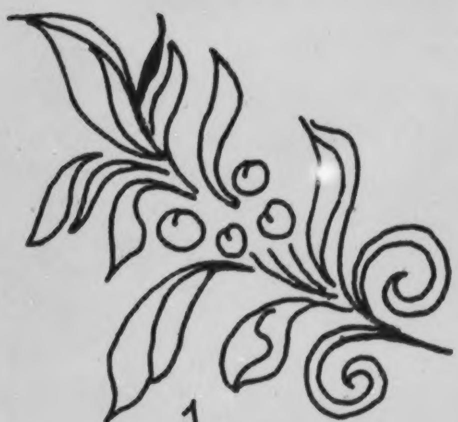
1. Using a double boiler, melt crayons and beeswax in proportions of 1 and 1/2 cups of melted crayon to 1 tablespoonful of melted beeswax. Add 2 tablespoons of boiled linseed oil and 1 tablespoonful of turpentine. The linseed oil acts as a thinner, the turpentine as a drying agent. It is not necessary to keep this mixture warm as it will stay this consistency for quite a while.
2. Use a stiff-bristle brush or a stick; paint the design on tagboard or heavy paper. The paint will stack up and give a textural effect as often seen in oil paintings.
3. Colors may be applied one over another in layers. As soon as they are dry to the touch, drawing can be done using the sgraffito technique. Slant the tool rather than dig grooves into the layers of paint.
4. Use wax crayons only. Use pointed end. Place a cookie sheet over the burner of the stove with the temperature set at low. Place drawing paper on the cookie sheet and draw directly on the paper, which will be warm enough to melt the crayon to a degree. The color will stack as the crayon melts and results will give a feeling of depth to the design.

F. Marbling

1. For each color mix 3 tablespoons of powder paint and 1 tablespoon of turpentine or paint thinner with enough varnish to make a solution the consistency of thin syrup. Mix several colors. Put each in a separate container.
2. Put water in an enamel pan to a depth of about two inches. Pour paint mixtures into the water--they float. Move the floating paint around on the water surface to get a design. Stir with a stick for "swirls." Do this gently.
3. When the desired design shows on the surface, lay a piece of paper on top of the water. Pat it gently, then pick it up on one corner and let the excess water roll off. Place this on newspaper to dry. It will be dry in a short time.

G. Tole Painting

1. Use a #7 watercolor brush and practice making many types of strokes by pressing heavily or raising the brush so tip only touches. (Fig. 1)
2. Make a floral design; try to make petals with single brush strokes. Use a heavy and light line. (Fig. 2)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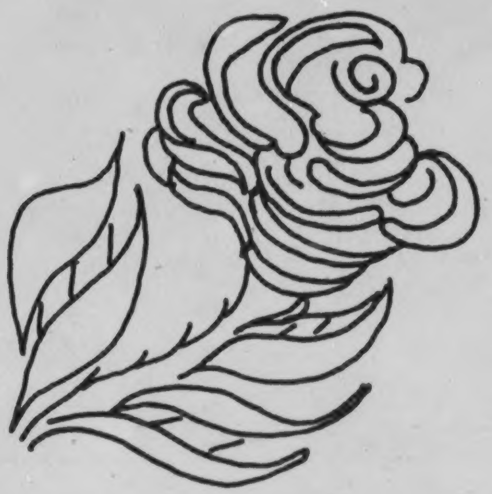

2.

H. Sand Painting

1. Use a heavy background material as canvas board or a plaque. Create a design and decide which areas to paint and which to sand. Paint white areas with white acrylic paint.
2. For the sand areas, outline the design with white glue. Fill the outline in with white glue and sprinkle with sand. Turn plaque or canvas board on edge to remove excess sand. Let dry and repeat gluing and sanding to build up the area. When each block is finished and dry, brush off and spray with matte finish.

I. Ink painting

1. Discuss with students how light affects the values of objects by producing shadows. Use a portable light source and show how values change on various shaped objects.
2. Show how adding more water to the brush full of ink will lighten the value intensity; how adding more ink will deepen the value intensity. Apply darkest values first working up to the lighter values.

References:

Making White Paper Speak, Rex Brandt, 40 slides and cassette, Water Color Workshop, 127 North Main, Cranbury, N.J. 08512.

The Art of Watercolor Painting, The Art of Acrylic Painting, The Art of Oil Painting, The Art of Landscape Painting, The Art of Mixed Media Painting, and The Art of Realistic Painting, designed and edited by Walter Brooks, M. Grumbacher, 460 West 34th Street, New York, N.Y. 10001.

PRINT MAKING (LINOLEUM)

Definition:

The utilization of a carved or treated linoleum surface to make a reproduction on a flat surface.

Objective:

The student should experience the joy of creating a design, then the excitement of carving this design into linoleum, and finally seeing his creation in print.

Materials Needed:

Battleship linoleum (mounted or unmounted), linoleum cutting tools No. 1 through 6, water soluble ink in colors or just black, brayers, a piece of glass or an inking plate, paper, a hand press.

Experience:

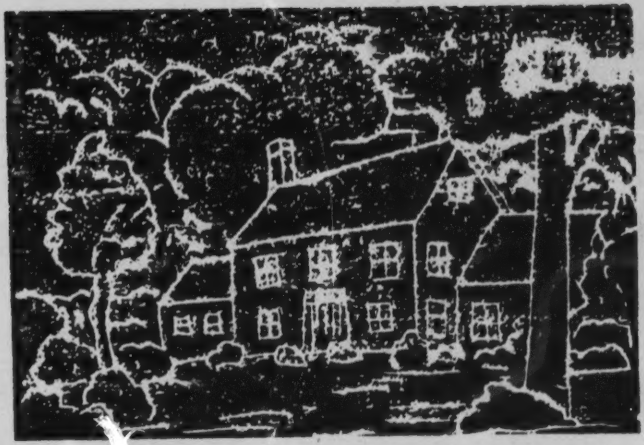
The teacher demonstrates the use of the tools and the position of the hands and then has the students practice the cuts on practice blocks.

The teacher should take time to explain mirror images, which is what prints are all about. The design which the student wants to have face right to left on his print must be carved left to right. All letters must be carved backwards and all words spelled backwards.

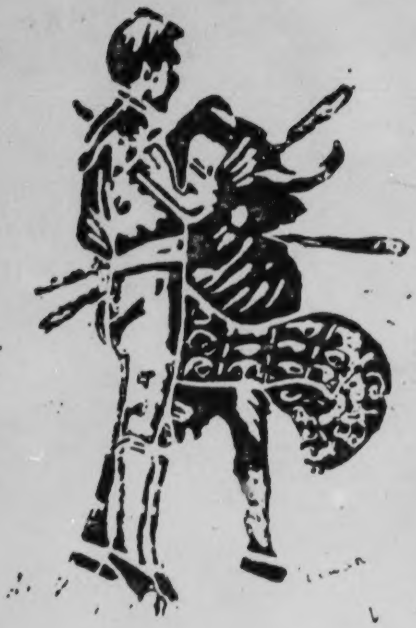
The student should create his idea for a print using bold, broad areas and developing this design into black and white (white areas are removed, black areas remain).

This design should then be transferred to the block by using carbon paper. The design is then cut, removing the white areas and leaving the black areas and the block is printed in order to see the results.

The student should be able to identify and use positive and negative printmaking.



NEGATIVE LINOLEUM BLOCK PRINT



POSITIVE LINOLEUM BLOCK PRINT

References:

Graphic Arts, Frederick Kagy, Goodheart-Wilcox Inc., Illinois.

Printing Without a Press, Maggie Bennett, Dukane Press, Inc.,
Florida.

Relief Printmaking, by Bromer, Davis Publications, Boston, Massachusetts.

PRINT MAKING (WOOD BLOCK)

Definition:

The utilization of a carved or treated wood block to make a reproduction on a flat surface.

Objective:

The student should experience the joy of creating a design, then the excitement of carving this design in wood, and finally seeing his creation in print.

Materials Needed:

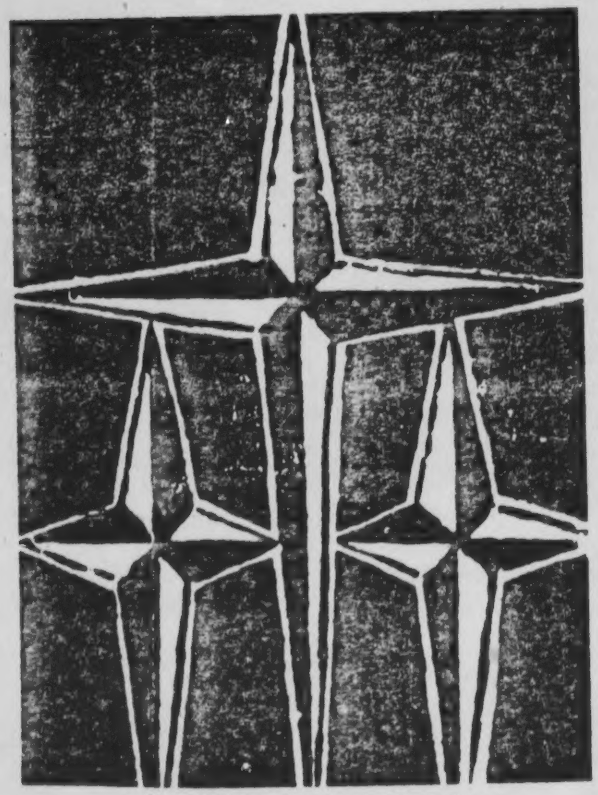
Wood, pine, bass, fruit, plywood and synthetic wood; U and V gouges; the skew chisel, the straight chisel and the broad spoon gouge; a brayer or a baren; a piece of glass or a printing frame; a press and ink.

Experiences:

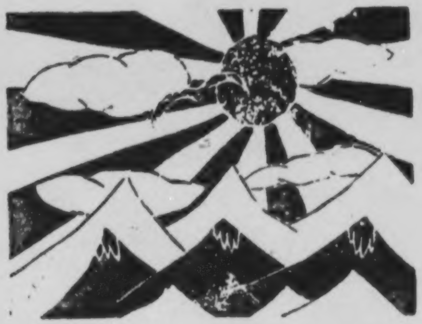
A. The teacher should demonstrate the use of the tools and the position of the hands on different kinds of wood, using different cuts.

B. Following the designing procedure for linoleum blocks, the student should cut his wood block.

C. The student should make prints of his wood block using either the baren or brayer technique.



NEGATIVE WOOD BLOCK PRINT



POSITIVE WOOD BLOCK PRINT

Reference:

Printmaking, Henry Frankenfield, Hunt Mfg. Co., Philadelphia, PA, 1964.

PRINT MAKING--SILK SCREEN (SERIOGRAPHY)

Definition:

Silk Screening is a process of printing done by forcing media (ink, paint,) through a fine mesh of silk or metal screen stretched over a printing frame.

Objective:

To acquaint the student with the process of reproducing like images as well as applying additional colors on top of one another. (color separations)

Materials Needed:

Ladies silk stockings, frames, sqeegee, water base ink, paint and masking materials.

Experiences:

A. The teacher should demonstrate the proper procedures for silk screening:
    1. Create a design.
    2. Make or use a ready made frame.
    3. Set up work areas with newspapers and necessary equipment.
    4. Place paper under screen.
    5. Put pattern on screen.
    6. Apply ink or paint along top edge. (see illustration)
    7. Pull ink or paint across the screen with the squeegee, forcing the paint through the screen.
    8. Lift screen carefully to expose printed design.
    9. Variation in colors can be obtained by using a stencil method. Be sure to wait for each color to dry.

B. Create a scrap book cover using the silk screen method.

C. Create posters with a sports theme.

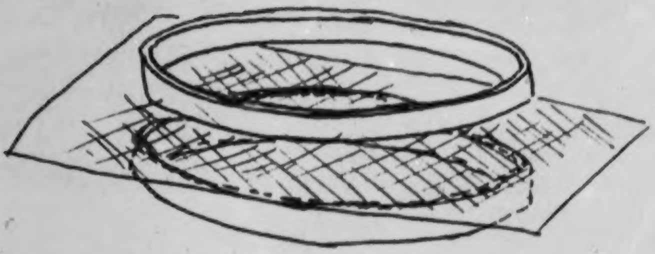
References

Silkscreen Printing, Eisenberg and Kaska, McKnight and McKnight, Illinois.

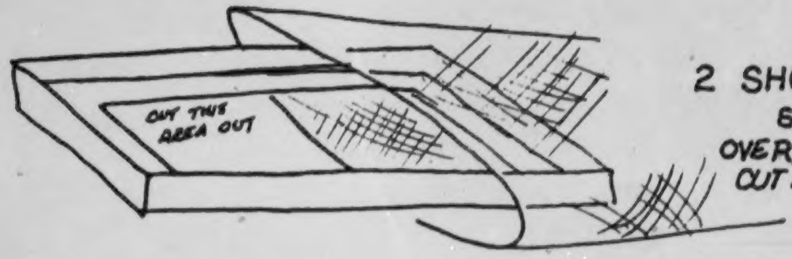
Artists Manual For Silkscreen Printmaking, Harry Shokler, American Artists Group, New York, N.Y.

Silkscreen as a Fine Art, Clifford T. Chieffo, Van Nostrand Reinhold, New York, N.Y.

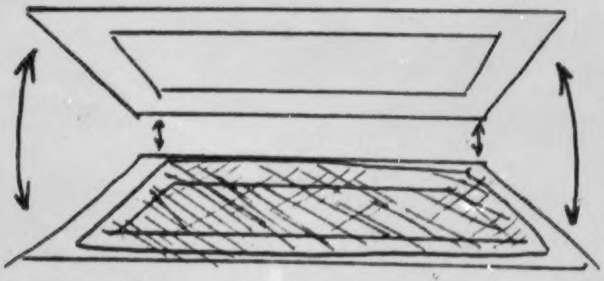
SILK SCREEN FRAMES



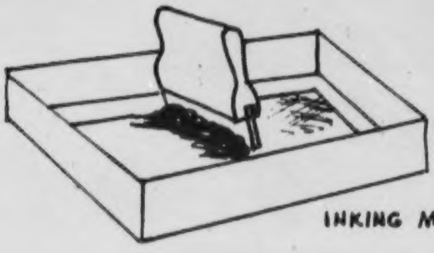
1 EMBROIDERY
HOOP FRAME



2 SHOE BOX TOP
SLIP STOCKING
OVER, TAPE & STAPLE.
CUT AWAY UNSTAPLED
PORTION



3. LAMINATED CARDBOARD
PLACE NYLON OR ORGANDY
IN FRAME, TAPE & STAPLE



INKING METHOD

PRINT MAKING (SCRAP AND GADGET PRINTING)

Definition:

Utilizing any raised surface capable of transmitting an impression in more than one copy or application.

Objective:

To acquaint the student with the unlimited possibilities of printmaking.

Materials Needed:

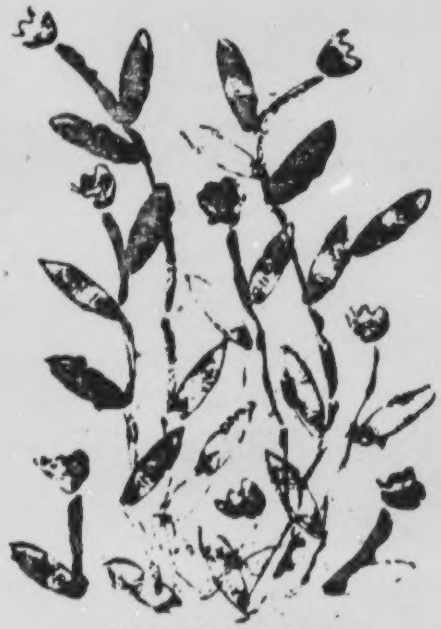
Kitchen utensils, fruits and vegetables, pencil with eraser removed, wooden blocks, light paper crushed into a ball, dowel-use ends, art gum eraser, sponges, cardboard, corrugated cardboard, match books, paper clips, spools, leaves, felt, bottle caps, plastic egg cartons, screw heads, jar lids, cookie cutters, sandpaper, screen, linoleum blocks, wood cuts,.....

Printing background: newsprint, construction paper, wrapping paper, tissue paper, pebble board, tagboard, rice paper, typing paper.

Printing materials: powder paint mixed with glycerine, evaporated milk, powdered milk, water-soluble printing ink.

Experience:

The student should use as many gadgets from the materials list as is possible in making a series of well designed prints.



GADGET PRINTING
(Cardboard Shapes)

References:

Art From Found Materials, Mary Lou Stribling, Crown Publishers, Inc., New York, N.Y.

Art From Scrap, Carl Reed and Joseph Orze, Davis Publications, Boston, Massachusetts.

PRINTING PROCESSES

1. Relief Process:
    - a. linoleum cut
    - b. wood cut
    - c. contact prints such as rubbings
    - d. wood engravings

Consists of cutting or pushing away the negative or light areas and inking the surface and pressing absorbant paper to the surface or by placing paper on and rubbing the surface with a drawing media such as chalk or pencil.

2. Stencil Process:
    - a. paper stencils
    - b. seriography or silk screen

Consists of constructing a stencil from paper or painting or otherwise making a stencil on silk so that when paint or ink is applied and drawn, sprayed or stipled over the surface, the liquid medium will fall on to the surface beneath.

3. Lithograph.

Is much the same as the relief process with the difference being that wax or oil crayon or paint is applied to Bavarian limestone so that when acids are applied to the stone, the painted or sketched areas will stand in relief. The litho stone is inked and printed much the same as wood or linoleum cut.

4. Intaglio:
    - a. etching
    - b. drypoint
    - c. mezzotint
    - d. engraving

Making the plate consists of scratching or burning impressions with acid in a soft metal plate. The printing process involves brushing on ink with a stiff brush, then wiping the surface of the plate with the hand or a cloth; thus, removing all excess ink. Damp paper is applied to the plate and rolled through the press. The paper is pressed into the ink laden impressions, picking up the ink.

5. Collagraph.

Only recently developed, this process is much the same as intaglio in principle. The plate, however, consists of a thin board with a collage type surface of odd object glued to the surface. The printing process is the same as intaglio.

TERMS FOR PRINTING UNIT

Materials

1. Chisel - a tool with a steel cutting edge at the end of a strong blade.
2. Gouge - chisel with curved, "V" shaped blade.
3. Skew Chisel - chisel with a beveled cutting edge.
4. Parting, "V" or Veiner chisel with a "V" shaped blade.
5. Mallet - wooden hammer used to assist in driving chisel.
6. Brayer or roller - hard rubber wheel (usually about 4"-6" inches in width) with handle with which the ink is applied to the plate.
7. Block or plate - the linoleum or wood block into which the desired design is cut.
8. Registration frame - "L" shaped frame used to register the print.
9. Whetstone - stone-like block on which metal cutting tools are sharpened.
10. Baren, spoon or burnisher - instrument used to press paper to inked plate or block.

General terminology

1. Artist's proof - first print from plate or block used to make sure print is as it should be.
2. "Running off" - slang for printing.
3. Registration - the process involving the correct placing of the print over two different blocks when two or more colors are desired.
4. Numbering - (in pencil always) writing the appropriate number on the print in the same sequence as they are printed.
5. Matting - "framing," with a heavy paper or light board, of prints.
6. Relief process - the process involving the printing of a plate from which the light or negative areas have been carved.
7. Inking - applying ink to the plate or block with a brayer or roller.

PHOTOGRAPHY

Introduction

Why teach photography? Our assumption in preparing this course of study is that photography has value for students by giving them the opportunity to express and design their ideas in a way which cannot be achieved in any other media.

We have four general reasons for using photography in the schools:

1. Photography creates interest and appreciation of art.
2. Photography increases visual awareness.
3. Photography promotes self evaluation.
4. Photography teaches discipline and organization.

Photography creates interest and appreciation of art. The high motivational involvement with photography evolves from two sources. First is the element of mystery and magic that is paramount in today's world of sophisticated technology. The ability to develop film and print photographs is not just a technical skill but a mysterious process known only to a few. The magic of an image appearing where a void has existed before affects even the most skeptical with confidence and enthusiasm.

Involvement and gratification lead to appreciation. Students will see results as soon as their first roll of film is developed. This will be an exciting time for them. As soon as a print is made the students have their first tangible finished product. Though the initial results will not be too sophisticated, the excitement produced will help them to understand and appreciate the technical and aesthetic principles of photography.

Photography increases visual awareness. The camera's viewfinder is a device that forces the students to be selective in their choice of composition, and thereby sharpens their powers of observation. In today's visually flooded environment, observation skills gained through the use of photography provide the student with the necessary tools for survival in a world of visual communication. He gains experience in these skills by applying artistic principles to the technical aspects of photography.

Photography promotes self evaluation. In producing photographs, the student has committed himself to a visual statement. These visual statements he has created force him into a position of problem solver and prompt him to answer questions that touch on his basic beliefs. Experience gained in photography and in creating visual statements promotes a healthy question of one's values.

Photography also promotes self evaluation by experiences gained in accepting criticism of these tangible products. Learning to accept criticism, both good and bad, builds strong confidence of self worth.

Photography teaches discipline and organization. Freedom, in fact, comes through discipline. In photography a certain body of techniques must be maintained before any real personal control can be exercised over the work. A certain amount of technical proficiency will free students from concerns of routine procedures, allowing more time to deal critically with the effectiveness of their photographs as communication. Technique and expression (communication) feed on one another.

PHOTOGRAPHY

Grades 1-6

Special Note: The following program is recommended as a foundation for basic photography at any age level if the students have had no previous photography experience.

FREEING UP

Definition: The introduction of photography principles for freedom of expression.

Objectives: To enable the student to act and think without hindrance or restriction to pre-conditioned ideas or rules.

Experience 1

Materials: Photo paper, strong light source, darkroom and darkroom equipment. (Refer to formula section for darkroom set-up.)

Activity: Produce photogram images on photographic paper. The room must be darkened. Arrange objects on the photographic paper. Expose arrangement in a strong light for about 6 seconds. Then place the exposed sheet in a tray of developer. When black areas are developed, put sheet into short-stop solution for a few seconds. Then slide sheet into "fixing" solution or hypo. After 10 minutes, place photograms in clear running water for about 20 minutes. Dry photograms. Experiment with opaque and translucent objects.

Experience 2

Materials: Polaroid camera, instamatic camera, and film.

Activity: Camera use - Have cameras available for student use. Have each student shoot a given number of pictures within a very short time span. This is to help the student free himself from indecisions, and self consciousness. Discuss pictures.

Experience 3

Materials: Clear contact paper, magazine pictures with a clay coating (slick), water, sponge, and a ruler.

Activity: Making transparencies - Press clear contact paper over a magazine picture. Soak the print in water then gently scrape the magazine print from the contact paper.

Experience 4

Materials: Photo paper, negative strips, sheet of glass.

Activity: Contact prints - In the dark or with safety light, red or amber, lay the printing paper emulsion side up and on the top of that place your strips of negatives, emulsion side down, side by side on the paper. Place the sheet of glass over them. Now turn on the light, leave it on for about 15 seconds, then turn it off again. Develop the paper the same way you would develop a regular print.

Experience 5

Materials: Straight pins, blackened negatives or slides, slide projector.

Activity: Scratching Negatives - Scrape the emulsion off blackened slides to draw a "picture" on the slide.

ANGLE OF VIEW

Definition: To explore objects from different points of view and to stimulate visual perception.

Objective: Students should photograph human size objects from different angles of view.

Experience 1

Materials: Camera and film

Activity: Students will photograph a human sized object such as a car, bush, bicycle, to show three to five different angles of view. (Above, side, under, etc.)

Experience 2

Materials: Poster type paper, paste, magazines, scissors.

Activity: Select one particular object for the subject of their poster. Then cut pictures of that object from magazines. See how many different angles of view will be shown of their object.

Experience 3

Activity: Construct and use a pin-hole camera. (Refer to the formula section for construction directions.)

SEEING PART OF THE WHOLE

Definition: Being able to construct a mental picture of an object by interpreting its smaller parts.

Objective: Students should produce a series of different pictures from one picture.

Experience 1

Materials: Newspaper, magazine, photographs.

Activity: Designing photographs - Collect magazine pictures as well as photographs of family and friends. Discuss those sections of each picture that attract your attention or are interesting in a special way.

Experience 2

Materials: Black construction paper, scissors, paste and poster paper.

Activity: Use a divided picture frame cut from black construction paper to crop a picture so that the most interesting sections are revealed. Outline these areas and then mount the "new" images you have created and cut them out. Mount the "new" image on a piece of paper.

Experience 3

Materials: Cameras and film.

Activity: Photograph a part of a human size object in such a way that the picture could describe the whole object, situation or feeling. For example: a curtain blowing to show it's a windy day, a baby's hand holding on to a mother's fingers to tell the whole story about babies and mothers, a tire mark and shattered glass on pavement to relate the scene of an accident.

SELF-PORTRAITS

Definition: To create pictures that will reveal an individual's personal features and personality.

Objective: Students will make several different types of self-portraits to develop awareness of his self-image.

Experience 1

Materials: Snapshots of each student, magazine pictures, scissors, poster paper.

Activity: Cut up snapshots of yourself and pictures from a magazine. Recombine the pieces to make interesting and amusing illustrations (yourself riding to the moon; performing unusual actions; being part of a different environment).

Experience 2

Materials: Photographs from home, magazine pictures, paste, scissors, poster paper.

Activity: Collage pictures can be made from existing photographs or from magazine illustrations. The collage is to express the student's personal characteristics. For example, some of his favorite hobbies, foods, places, sports.

Experience 3

Materials: 2 X 3 foot piece of newsprint (2 for each person), pen, pencil or crayons, camera, slide film, slide projector.

Activity: Give each child a 2 X 3 foot piece of newsprint and let him draw a full-length picture of himself, putting in as much detail as he can. Then put these pictures away. Now take a slide picture of each child showing his whole body, head-to-toe. Then, have a child lie on a piece of newsprint and let another child draw around him. Project their slide on a screen nearby and let them draw in the details on the newsprint outline. When this is finished, cut it out and paste it on a piece of cardboard so that it will stand up. Now get out the original drawings the children made and let them compare.

MOTION AND MOVEMENT

Definition: To communicate the idea or feeling of motion through the use of still pictures or photographs.

Objective: Students are to produce images that illustrate movement and/or a feeling of motion.

Experience 1

Materials: Stiff paper, crayons, pencil or dowel stick.

Activity: On one side of a piece of stiff paper draw a bird, on the other side a cage for the bird. Attach the drawing to the tip of a pencil or dowel stick. Twirl the stick to create an illusion of motion. Try a hand and cup; laughing and crying faces.

Experience 2

Materials: A small notebook, pages stapled or tied together, pencils and crayons.

Activity: On one side of each page, near the right hand edge of the paper, draw figures or shapes. Have the position of each figure or shape change slightly as you proceed from page to page. Flip pages to animate the drawings.

Experience 3

Materials: Camera and film.

Activity: The teacher will demonstrate the technique of panning. Have the students select a fast motion situation (passing cars) and by applying the technique of panning, their pictures should register a blurred background while retaining a sharp subject image.

Experience 4

Materials: Cameras, film, magazine pictures.

Activity: Proof of motion can also be expressed by capturing suspended motion. For example, an airplane in flight, a pole vaulter crossing the bar. Have the students make their own picture of suspended motion.

STORY - SEQUENCING

Definition: To identify and illustrate visual sequencing skills within a story structure.

Objective: Students will use visuals to create a story sequence.

Experience 1

Materials: Magazines, scissors, paste, poster paper.

Activity: Pictures from magazines can be cut and pasted on a background paper to construct a story. An arrangement of inconsistent or normally incompatible images can often produce unconventional results. There is enormous scope for individual creativity, humor and imagination. Then have each child share his story with the class.

Experience 2

Materials: Cameras, film (print and slide), slide projector.

Activity: Demonstrate the use of photography to increase the value of field trips. If each child can take a camera, then he can take pictures of those features of the trip that are most interesting. If cameras must be shared, then each child should have the opportunity to take a few pictures. When the trip is over......

1. Let each student tell about the trip using his pictures.
2. Construct a bulletin board to describe the field trip.
3. Make scrapbooks describing the field trip.
4. Produce a slide show. Place the field trip pictures in proper sequence and prepare a recorded tape to narrate the field trip.

Experience 3

Materials: Story books, drawing paper and crayons, visual-maker, tape recorder.

Activity: Have the class select a story from a book or a story record. Read the story aloud to the class or listen to the record. Have the students make pictures that will show who is in the story; what they did; when it happened; what happened; what will happen next. When all the pictures are complete, have each child arrange his pictures in the proper order. Now read the story or play the record and watch the pictures. Combine the pictures from each "artist" to illustrate the story. Use the visualmaker to prepare slides of the pictures.

Experience 4

Materials:	Cameras and film.
Activity:	The pure-picture story. This is used occasionally for short "how-to-do-it" picture sequences which are self-explanatory. Since everything must be conveyed in visual form, this is the most difficult type of picture story and should be used only in instances involving predominantly factual rather than intangible subject qualities. For example, an illustrated notebook can be made by the student to demonstrate the construction of a box kite or canning tomatoes.

MULTIPLE IMAGES

Definition: Placing two or more images together to create a new, unique, and separate idea which amplifies the meaning of the individual parts.

Objective: Students will create a new image by manipulating and rearranging a group of images.

Experience 1

Materials: Slides, slide projectors, screen.

Activity: Two different slides will be projected onto the screen but from separate projectors. Have the students come up with their own unique combinations.

Experience 2

Materials: Overhead projector, transparencies made with clear contact paper.

Activity: Transparencies, slides, or negatives can be sandwiched together to create a totally different thought. Have the students make their own transparencies with the overlapping effects in mind. Let them share their creations with the class on an overhead.

Experience 3

Materials: Cameras and film.

Activity: Reflections can create a delightful photograph by increasing its content or mood. Have the students produce their own photograph showing the characteristics of the following reflection categories:

1. Undistorted Reflections - mirror reflections or water reflections.
2. Distorted Reflections - reflections on a curved surface such as a shiny car fender.
3. Superimposed Reflections - transparent surfaces can be used to create surrealistic effects since they permit the photographer to simultaneously show objects in front of and behind his camera,

e.g., a window reflection. Successful utilization of superimposed reflections depends upon two conditions: that objects behind the reflecting screen be somehow related to those reflected on the screen and that no reflection of the photographer or the camera appear in the picture.

SYMBOLISM

Definition: Identifying and interpreting subjects or symbols and incorporating them into an extrinsic environment.

Objective: To identify or interpret symbols.

Experience 1

Materials: Cameras and film.

Activity: Identification of symbols - Have the children take pictures of important symbols found around their school or home environment (crosswalk paths and street lights). Then have the children discuss the meaning of each picture.

Experience 2

Materials: Cameras and film.

Activity: Identification of symbolic characters - Have the children take pictures of people around school, home and the community such as the principal, policeman, or a parent. Then have the prints displayed on a bulletin board with a caption giving their identity, job or responsibility and where each can be found.

Experience 3

Materials: Cameras, film, poster paper, magazine pictures.

Activity: Interpretation of a symbol or symbolic character - Present a picture of that which you want the students to react to. Then have the students create a collage or notebook with actual picture or picture cut-out of a magazine which would show what this particular object means to them. (The duties and characteristics of the object.)

Experience 4

Materials: Cameras, film, magazine pictures, paste, scissors, poster paper.

Activity: Incorporating Symbolism - By changing the position of an object in a picture you can change its symbolism. The same is true if a particular symbol is placed in an unrelated environment. Have the students experiment with the composition of a picture to demonstrate how the emphasis can change as the position changes. For example, a long shot shows the relationship between a subject and its surroundings, whereas a closeup for the most part concentrates on documenting texture and detail. Have the students construct a background environment on a poster, using magazine pictures. Then place a picture of a symbol in the environment which is normally alien to that particular symbol. Get the class to react to each poster.

PHOTOGRAPHY
SECONDARY

FREEING UP

Definition: The introduction of photography principles for freedom of expression.

Objective: To enable the student to act or think without hindrance or restriction, to pre-conditioned ideas or rules.

Experience 1

Materials: Lecture, text, slides, demonstration, filmstrips, darkroom, (see diagrams-recipes and formulas), enlarger(s), contact printer (see diagram--contact printer and contact), trays, chemicals, scissors, photographs, magazines, glue, backing, roll of film, camera, (see formula and recipes.)

Activity 1: History - Students explore development and use of camera from early 1600's to present day.

Activity 2: Camera - Discuss cameras, including types (format, rangefinder, reflex), systems (lenses and accessories), handling and care.

Activity 3: Photogram - Students make a photogram (see glossary).

Vasoline-grams - Cover objects with vasoline and press on photo paper and develop.

Activity 4: Collage - Students will make a collage illustrating various human emotions; then discuss tones and composition that strengthen the emotion. (See glossary for definition of collage.)

Activity 5: Shoot one roll of film, each frame different, in 20 minutes. Develop, make contact-prints, make prints, and discuss results.

ANGLE OF VIEW

Definition: To explore objects from different points of view and to stimulate visual perception.

Objective: Students should photograph human size objects from different points or angles or view.

Experience 1

Materials: Filmstrips, slide demonstration (see formulas and recipes), tank, reels or aprons, thermometer, graduate, slides, darkroom, photographs, textbooks, camera, roll of film.

Activity 1: Film development - Develop film from Experience 1 - Activity 5 (previous page).

Activity 2: Contact print - print enlarging - See negative from above activity.

Activity 3: Composition - Instructor and students explore principles of composition, covering rule of 3rds, depth of field, lines, curves, patterns and perspective. (See glossary for definitions.)

Activity 4: Expose roll of film of one or more subjects taken from any angle except eye level. Develop, contact, and print - discuss results.

SEEING PART OF THE WHOLE

Definition: Be able to construct a mental picture of an object by interpreting its smaller parts.

Objectives: Students should produce a series of different pictures from one picture.

Experience 1

Materials: Textbooks, photographs, filmstrips, slides, flash, floodlights, L-shaped cardboard guides, negative, camera, film.

Activity 1: Cropping - Discuss and illustrate use of L-shaped guides in framing of photographs.

Activity 2: Teacher and students explore the use of entire negative cropping by studying negatives, photographs, filmstrips and slides.

Activity 3: Photograph part of an object that will illustrate or describe the whole object. Develop contact, print, and critique results.

SELF-PORTRAITS

Definition:	To create pictures that will reveal an individual's personal features and personality.
Objective:	Student will make several different types of self-portraits to develop awareness of his self-image.

Experience 1

Materials:	Textbooks, photographs, filmstrips, slides, flash, floodlights, lighting, film, information sheet, camera.
Activity 1:	Discuss and demonstrate uses of light including: available environmental light; incident-reflected light; back-front-side-top-bottom lighting; use of flash; ways of avoiding common mistakes; calculating exposure; and utilizing flash (bounce, direct, diffused, bare bulb, reflected).
Activity 2:	Discuss and demonstrate the relationship of f/stop to shutter speed, film exposure sheet, metering technique, and bracketting (over and under exposure).
Activity 3:	Shoot roll of film to create 6 different self-portraits using mirrors, shadows, self-timer, cable release, and tripod. Develop, contact, print and critique results.

MOTION AND MOVEMENT

Definition: To communicate the idea or feeling of motion through the use of still pictures or photographs.

Objective: Students are to produce images that illustrate movement and/or a feeling of motion.

Experience 1

Materials: Text, photographs, slides, filmstrips, cameras, film, darkroom.

Activity 1: Shutters - Students and teacher explore shutters, including: types, speed, controller of motion, and panning.

Activity 2: Aperture - Using materials above, students and teachers explore aperture, including: control of depth of field, hyper-focal focus, and zone focus.

Activity 3: Using materials above, expose a role of film depicting: panning (see glossary), peak action, and action with movement. Develop contact, print and discuss.

STORY - SEQUENCING

Definition: To identify and illustrate visual sequencing skills in a story structure.

Objective: Students will use visuals to create a story sequence.

Experience 1

Materials: Slides, photographs, text, filmstrips, publications, camera, film, darkroom.

Activity 1: Demonstrate and discuss - photo story, sequences, and essay using materials above.

Activity 2: Expose roll of film depicting a story sequence. Develop, print, edit, and arrange in sequence. Discuss and critique results.

MULTIPLE IMAGES

Definition: Placing two or more images together to create a new, unique and separate idea which amplifies the meaning of the individual parts.

Objective: Students will create an image by manipulating and rearranging a group of images.

Experience 1

Materials: Film, text, Kodak technical manual.

Activity 1: Using the materials above, discuss and explore types of film and their characteristics including: ASA, (see glossary), grain, and sensitivity.

Activity 2: Using the materials above, discuss and explore types of developer and their characteristics including: paper, film, and special purpose.

Activity 3: Using the materials above, discuss and explore types of paper and their characteristics including: contrast control, contact paper, projection paper, and finishes and weights.

Activity 4: Using the materials above, discuss and explore ways of achieving special effects, including: toning, solarization, reticulation, high contrast (see glossary).

Activity 5: Expose a single roll of film twice; develop, print, and discuss.

Activity 6: Sandwich negatives using two or more negatives in negative carrier (see glossary and diagram). Print and discuss.

Activity 7: Multiple printing - Expose two or more negatives on a single piece of enlarging paper. Print and discuss.

SYMBOLISM

Definition: To identify and interpret subjects or symbols and incorporate them into a foreign environment.

Objective: To identify or interpret symbols.

Experience 1

Materials: Spot tone, "ooo" brushes, dry mounting tissue, straight edges, cutting tool, mounting board, pencil, cutgum-eraser, ruler, tacking iron, dry mount press or hand iron, mat board, mat knife, Dexter mat, cutter, adhesive tape, wood screws, picture hanging wire, finishing nails, "L" hooks, glue, pliers, hammer, saw, camera, film.

Activity 1: Finishing and mounting - Discuss finishing and mounting techniques including: spotting, mounting, and matting using the materials above.

Activity 2: Photograph symbols in students' environment, develop, enlarge, discuss.

Activity 3: Identify and photograph symbolic characters from school or the community, develop, enlarge, discuss.

Activity 4: Photograph object that represents a character or subject without overall photograph of character or subject represented; develop, enlarge, discuss.

Activity 5: Photograph a symbol in a foreign environment by placing the object there. Develop, enlarge, discuss.

EVALUATION

Photography has value for students in giving them the opportunity to express and design their ideas and desires. Evaluation of the objectives of the course of study should be tailored to the individual class and student. The key to this evaluation should be based on the growth of the individual. Each student should be evaluated with a firm idea of his or her starting point (skills), finished product, and distance traveled. Areas of consideration in this evaluation are technical quality, creativity, expression, organization, discipline, and self-evaluation.

A. Technical Quality
   1. Composition
   2. Sharpness of image
   3. Contrast
   4. Print quality (scratches, dust, exposure)
   5. Use of light

B. Creativity and Expression
   1. Visual impact
   2. Composition
   3. Special techniques (filters, depth of field, shutter speed, multiple exposure)
   4. Tonal balance (complementing mood of image)

C. Organization and Discipline
   1. Use of established darkroom techniques
   2. Use of camera as a basic photographic tool to accomplish assigned task

D. Self-Evaluation
   1. Willingness to accept criticism
   2. Improvements from critical evaluation
   3. Initiative to produce self-directed work

RECIPES AND FORMULAS

Film Development Procedure

Temperatures at 68°

1.	PRE-SOAK:	Pour in water to fill tank. Agitate for one minute, then discard.
2.	DEVELOPER:	Pour in developer, then tap tank twice (to release air bubbles), agitate for the first 30 seconds, then agitate for 10 seconds each minute. At the end of development, pour out. Time of development and temperature of chemicals are critical. Refer to data sheet with film.
3.	STOP BATH:	Pour in indicator stop bath, agitate like developer, then discard after 30 seconds to one minute; or, fill and empty tank four to six times with water.
4.	RAPID FIX:	Pour in. Then agitate like developer for two to three minutes. POUR BACK INTO BOTTLE. With regular fixer, agitate for 7-10 minutes.
5.	WASH BATH:	Open film tank and fill and empty tank with water 12 to 15 times, or total wash time of two minutes.
6.	HYPO CLEAR-: ING AGENT	Pour in Hypo Clearing Agent, agitate like developer for two minutes.
7.	FINAL WASH:	Place film reels into film washer and wash for ten minutes.
8.	PHOTO FLO:	Pour in photo flo, agitate 30 seconds to one minute.
9.	SQUEEGEE:	Hang up to dry.

PAPER DEVELOPING

	STEP	TIME		CHEMICAL
1.	Developer	1 1/2 minutes (1-3 minutes)		Dektol (diluted 1:2 with H20)
2.	Stopbath	10 seconds		Indicator Stopbath
3.	Fix	7 minutes (5-10 minutes) White light okay after 30 seconds		Fixer or Rapid Fixer (1:1)
4.	Wash (A. or B.)			
A.	Wash	1/2 hour		Running Water
	OR			
B.		Single Weight	Double Weight	
	Rinse	1 minute	1 minute	Water
	Hypo Removal	2 minutes	3 minutes	Hypo Clearing Agent
	Final Wash	10 minutes	20 minutes	Water
5.	Drying			

NOTE: With rapid-drying resin-coated enlarging papers all that is needed for washing is one minute under running water.

USEFUL CAPACITIES OF SOLUTIONS IN TRAYS

Solution	Life	8 x 10 Inch Sheets Per Quart
Dektol (1:2)	12 hours	30
Indicator Stopbath	3 days	Discard when the color changes to purplish blue
Fixer or Rapid Fix	1 week Strength can be checked with Hypo-check	25
Hypo Clearing Agent	24 hours	20 without pre-rinse 50 with pre-rinse

KEEPING PROPERTIES AND USEFUL CAPACITIES OF SOLUTIONS

SOLUTION	KEEPING PROPERTIES WITHOUT USE				USEFUL CAPACITIES	
	Stock Solution in Stoppered Bottle		Working Solution		8 X 10 Inch Sheets per quart	
	Full	Half Full	Tray	Tank	Tray	Tank
D-76	6 mo.	2 mo.	24 hr.	1 mo.	2 1/2	2 1/2 with replenishment
Microdol-X	6 mo.	2 mo.	24 hr.	1 mo.	4	4 with replenishment
			If diluted 1:3 throw away after used once			
HC-110 (Dil A)	6 mo.	2 mo.	24 hr.	2 mo.	5	10 with replenishment
HC-110 (Dil B)	3 mo.	1 mo.	24 hr.	1 mo.	2 1/2	5 with replenishment
Dektol	6 mo.	2 mo.	12 hr.	-----	30 (1:2)	-----
Indicator Stopbath	Indef.		3 days	1 mo.	Discard when the color changes to purplish-blue.	
Fixer	2 mo.		1 week	1 mo.	25	
Rapid Fixer (with hardener)	2 mo.		1 week	1 mo.	Negatives - 30 Prints - 25 (dil 1:1)	
Hypo Clearing Agent	3 mo.		24 hr.		Prints - 20 without pre-rinse 50 with pre-rinse Negatives - 12 to 15 without pre-rinse 35 to 50 with pre-rinse	

*Approximate roll to sheet equivalents:
1 roll 35mm (36 exposure) = 8 X 10-inch sheet
2 rolls 35mm (20 exposure) = 8 X 10-inch sheet
3 rolls 126 (instamatic 12 exposure) = 8 X 10-inch sheet
1 roll 120 or 620 = 8 X 10-inch sheet

TRAY ARRANGEMENT FOR PAPER DEVELOPING

Developer Diluted 2:1 1-3 minutes	10-15 seconds Stop bath Acetic acid	7-10 Fix	3 minutes Hypo-clear (optional	Wash running H^2O 15-30 minutes

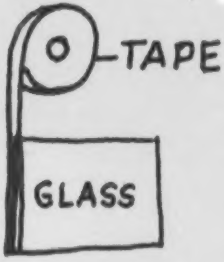
Mix stock solutions of developer, stop bath, fix, hypo clear as directed on labels.

CONTACT PRINTER AND CONTACT PRINT

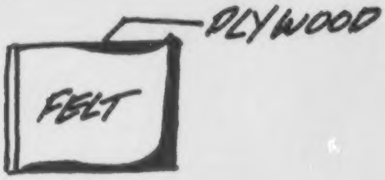
Materials

1-12" x 12" glass
1-12" x 12"1/4" plywood
1-12" x 12" felt
1 roll duct tape 2"

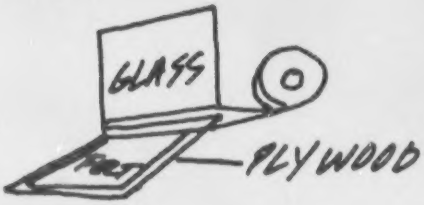
1. Tape glass edges.



2. Tape felt to plywood.

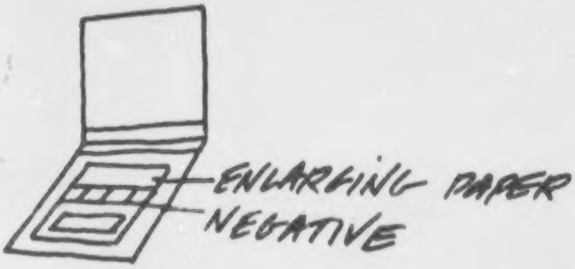

PLYWOOD
FELT

3. Form tape hinge.


GLASS
FELT
PLYWOOD

4. Expose according to density of negative 4-10 seconds.

5. Develop as a normal print.


ENLARGING PAPER
NEGATIVE

ENLARGER

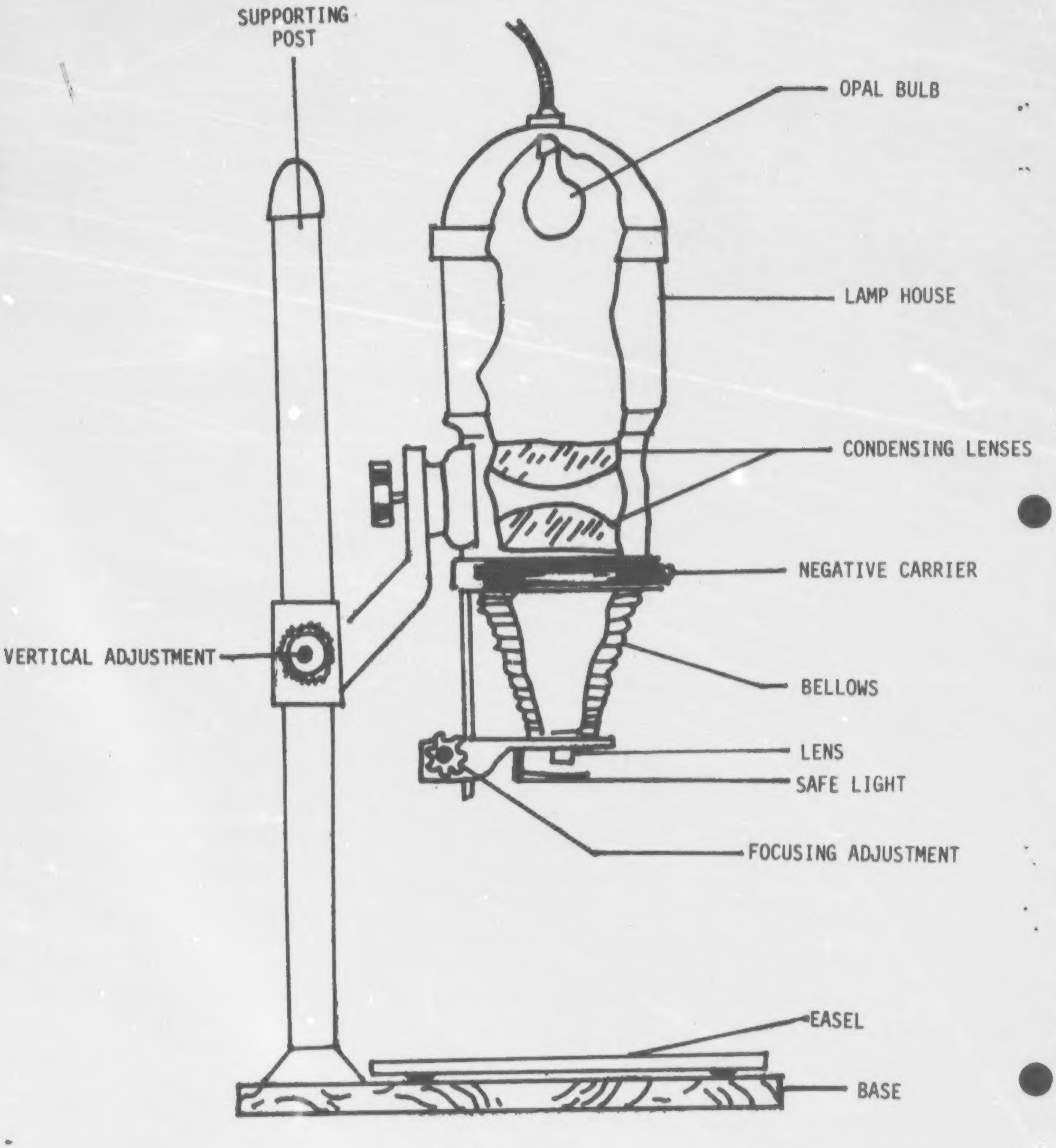

SUPPORTING POST
OPAL BULB
LAMP HOUSE
CONDENSING LENSES
NEGATIVE CARRIER
VERTICAL ADJUSTMENT
BELLOWS
LENS
SAFE LIGHT
FOCUSING ADJUSTMENT
EASEL
BASE

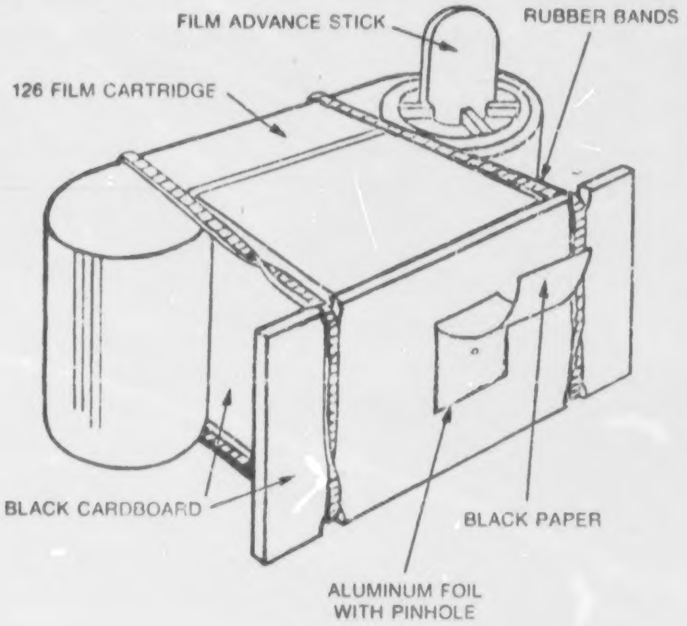
DIAGRAM OF AN ENLARGER

HOW TO MAKE A PINHOLE CAMERA

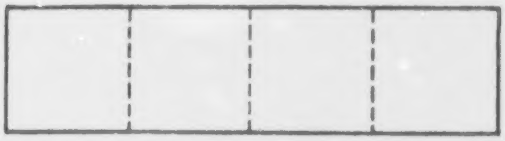
This interesting project helps you to understand how a camera works.

MATERIALS

1 cartridge Kodak Verichrome pan film 126
1 piece black cardboard, 1 1/4 by 5 3/4 inches
1 piece black cardboard, 1 1/2 by 2 3/4 inches, with 1/2-inch square opening cut in center
1 piece aluminum foil, 1-inch square
1 piece black paper, 1-inch square
1 wooden tongue depressor
2 rubber bands
1 No. 10 sewing needle
black masking tape

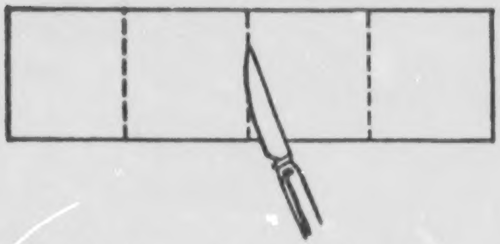

FILM ADVANCE STICK
RUBBER BANDS
126 FILM CARTRIDGE
BLACK CARDBOARD
BLACK PAPER
ALUMINUM FOIL
WITH PINHOLE

MAKING THE CAMERA

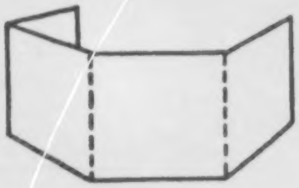


1. Measure and mark the large piece of black cardboard into four sections, each 1-7/16 inches wide.

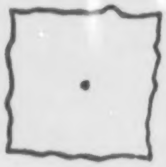
2. Using a knife, cut through the top layer of cardboard along each of the lines. This will make it easier to fold the cardboard. Don't cut yourself!



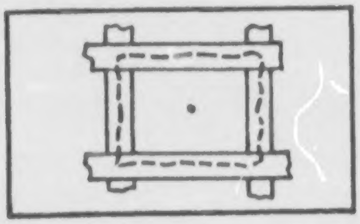
3. Fold the cardboard into a box and tape the edges together with the black tape. This is your camera box.



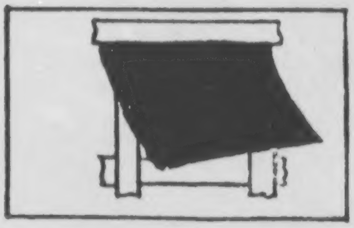
4. Using only the point of the sewing needle, make a very tiny pinhole in the center of the aluminum foil.



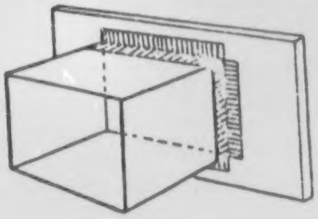
5. Center the pinhole in the foil over the square opening in the small piece of cardboard. Tape the foil to the cardboard on all four edges.



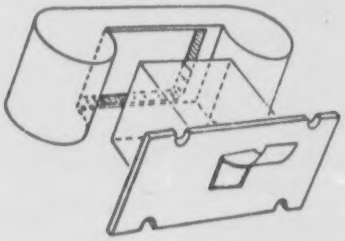
6. Put the small piece of black paper over the pinhole and tape it along the top edge.



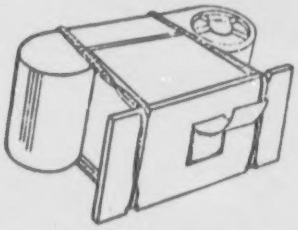
7. Tape the small cardboard to the box. Use plenty of tape and make sure all the edges are taped together so no light can get into the camera box.



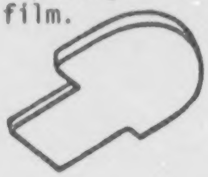
8. Put the camera box into the square opening in the film cartridge. This should be a tight fit so that no light can get into the camera.



9. Use the two rubber bands to hold the camera and cartridge in place.

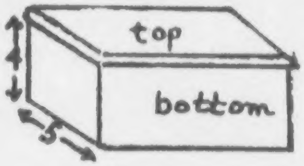


10. Trim the wooden stick so that it will fit the round opening in the cartridge and turn the film.



SIZE 10 1/2 DOUBLE-E SPECIAL DELUXE SHOEBOX CAMERA

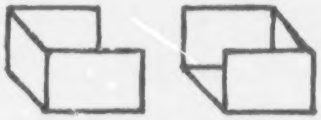
Build yourself the Nikon or Pocket instamatics of the 80's, the 1880's -- a genuine shoebox camera for people with big pockets.



MATERIALS:
1. Shoebox with the ends at least 4" x 5"
   -- a little smaller like 3" x 5" will do
   -- the sturdier the better
2. Black construction paper
3. Masking tape
4. Black tape -- plastic, electrical or photographic masking tape
   -- friction tape is not sticky enough
5. Scissors (a matte cutter-razor knife is helpful)
6. Aluminum foil
7. Small needle -- a #10 sewing needle if you can find one
   -- or when you buy a big pack of 60 needles for 45¢ use the smallest size needles only or ask someone in some machine shop to measure the diameter of the needle at its midpoint with a micrometer. Something around 0.020 inch (.018 - .022) will do fine.
8. Ruler
9. White glue
10. Black spray paint (flat not glossy) will help

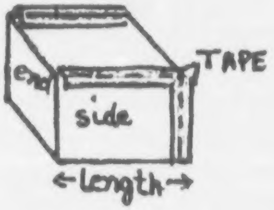
ASSEMBLING PROCEDURE:

A. Cut the box bottom exactly in half like so.



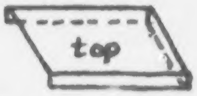
STEP A.

B. Fit them together using masking tape. Use black tape where light has the slightest chance of getting in, such as in the corners.



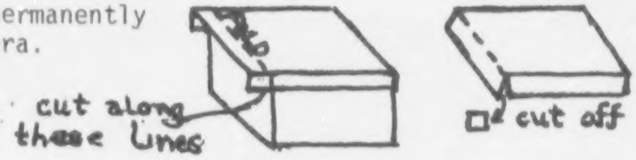
STEP B.

C. Measure the length of your new compact box bottom and add one inch to this length--cut your box top to this length.



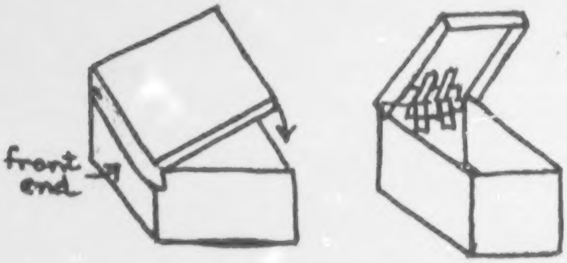
STEP C.

D. Place the lid on the box bottom. Cut the two overhanging corners as in the picture and fold along a line so that the lid will fit snugly over the box bottom.



STEP D.

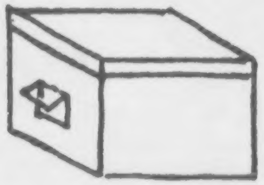
E. Tape the folded flap onto the box bottom with black tape on the outside and inside. Reinforce with masking tape. The front end of the lid is now taped permanently to the front end of your camera.



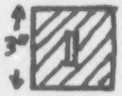
STEP E.

F. SHUTTER -- shutters let light in and keep light out.

Make a flap in the front of the camera by cutting all the way through three sides of a one inch square drawn in the center of the front end of the camera. Fold outward on the top side of the square as in the diagram.



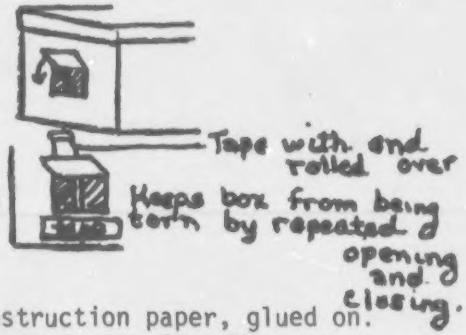
With the left-over box top, cut out a 3" square and put a slit 1/4" x 1" in it like so:



A razor knife helps in cutting both the slit and the flap.

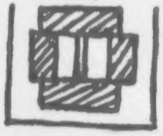
Glue this 3" square to the inside of the front end so that the slit is centered in the flap opening like so:

Add a piece of masking tape to the shutter flap and a piece to the box where the flap is going to be taped closed.

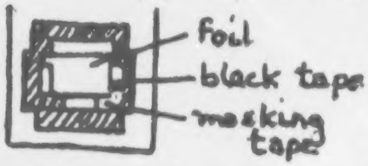

Tape with end rolled over
Keeps box from being torn by repeated opening and closing.

G. Blacken the inside of the camera with black construction paper, glued on. Leave a 1" square hole in the front end so light can come in. You can touch up with a black marker or spray paint.

H. PINHOLE (1) On the inside add permanent strips of black tape around the shutter slit like in the picture. This keeps the paper from ripping in case you want to change the piece of foil with the pinhole (which we're coming to).



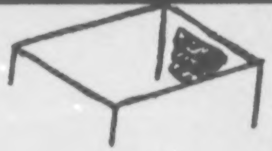
(2) Tape a 1 1/2" square piece of aluminum foil (shiny side against box) to the permanent pieces of tape already inside the front end.



If flat black spray paint is available, spray the foil lightly.

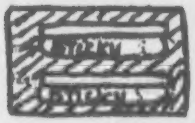
(3) From the outside of the box, take the needle between the middle finger and thumb and carefully pierce a hole by pushing the needle as straight as you can halfway through the foil. Slowly rotate the needle to get a smooth round hole. Carefully withdraw the needle without widening the hole.

I. PAPER NEGATIVE HOLDER



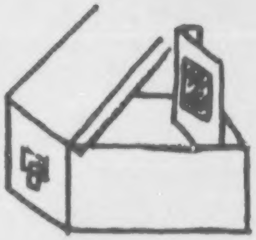
(1) Add 3 permanent strips of masking tape to the inside of the back end of the camera.

(2) Roll up 2 pieces of masking tape sticky-side out, and attach them to the permanent tape like so:



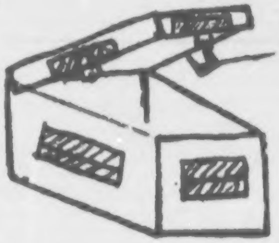
This will hold your pieces of printing paper to be used as negatives.

(3) The distance from negative to pinhole can be adjusted closer by folding a piece of cardboard as in diagram and using it as your negative holder. This should be taped in.



J. CLOSURES

Add permanent strips of masking tape to the sides of the box bottom and lid.

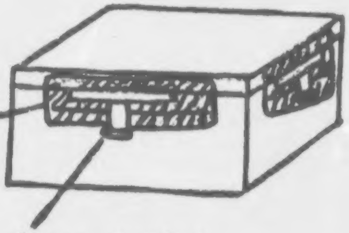


Rolled on ends (so it's not sticky)

Add a vertical strip of tape to the camera lid with the end rolled or folded over on itself.

Add another horizontal strip of tape over each of the vertical ones so that half of it will stick to the lid and half to the box bottom.

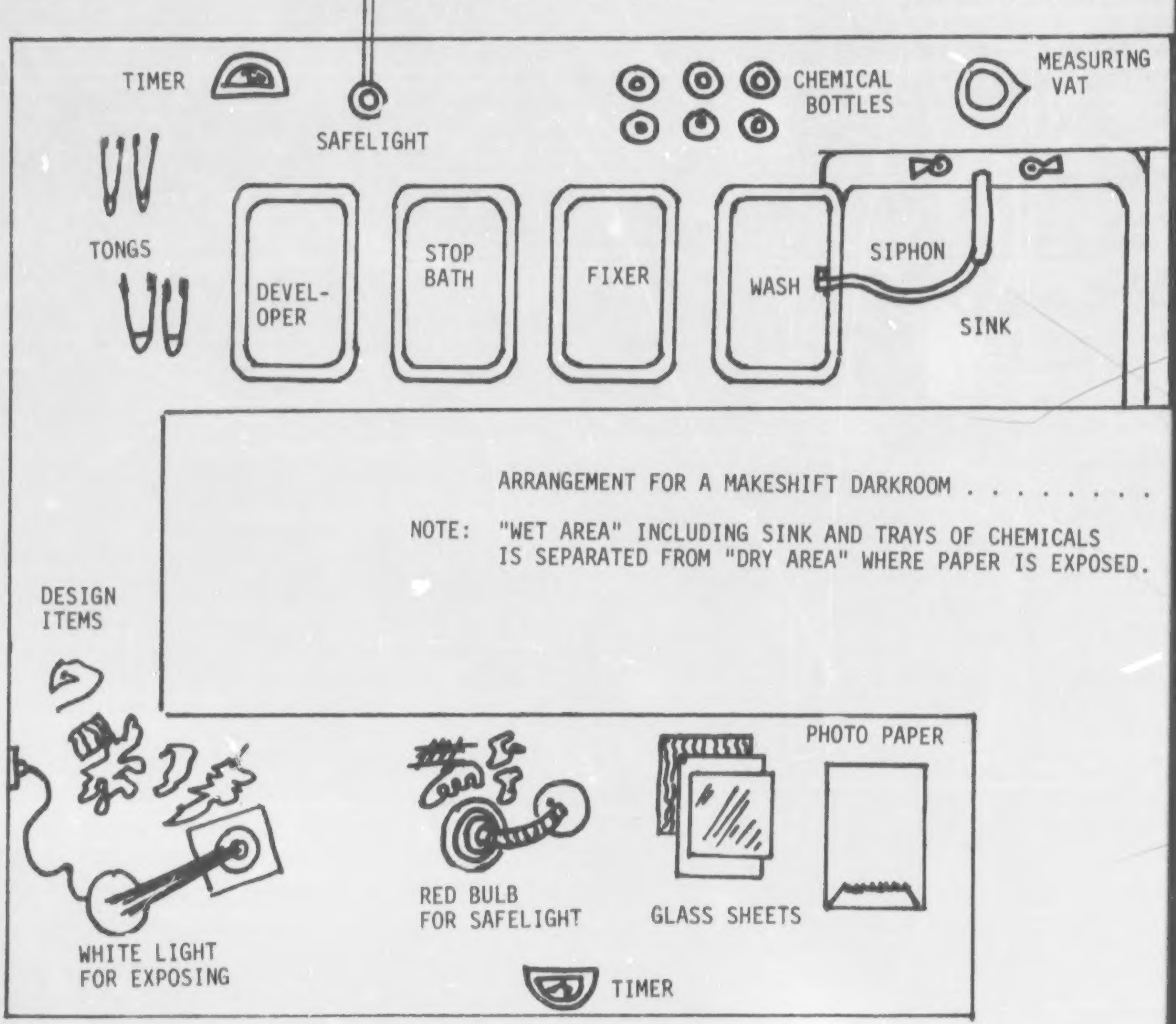
To quickly open each side, pull on the vertical piece of tape. This will lift the horizontal piece also.



Permanent tape

Quick release opening

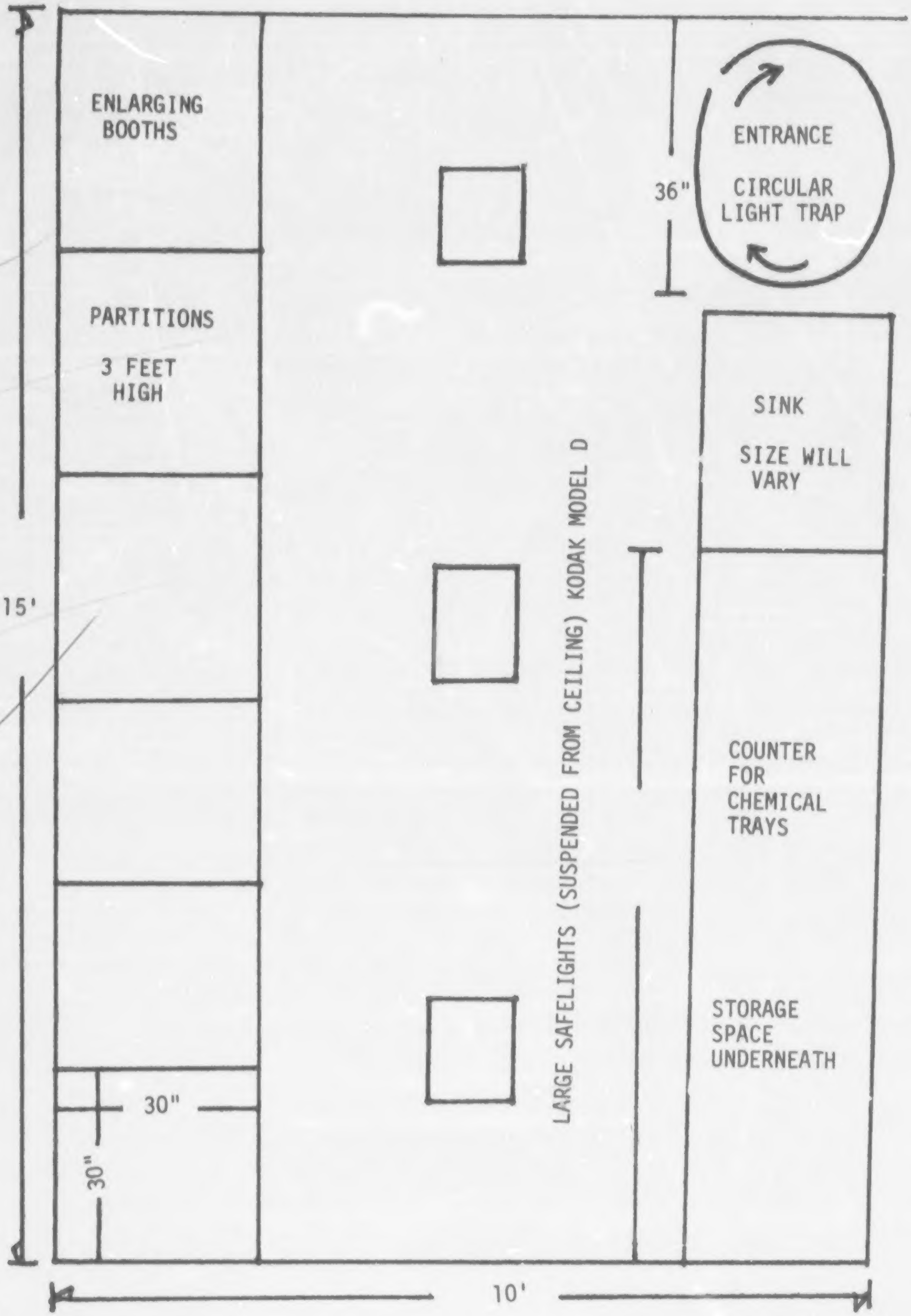
MAKESHIFT DARKROOM


TIMER
SAFELIGHT
CHEMICAL BOTTLES
MEASURING VAT
TONGS
DEVEL-OPER
STOP BATH
FIXER
WASH
SIPHON
SINK
DESIGN ITEMS
PHOTO PAPER
RED BULB FOR SAFELIGHT
GLASS SHEETS
WHITE LIGHT FOR EXPOSING
TIMER

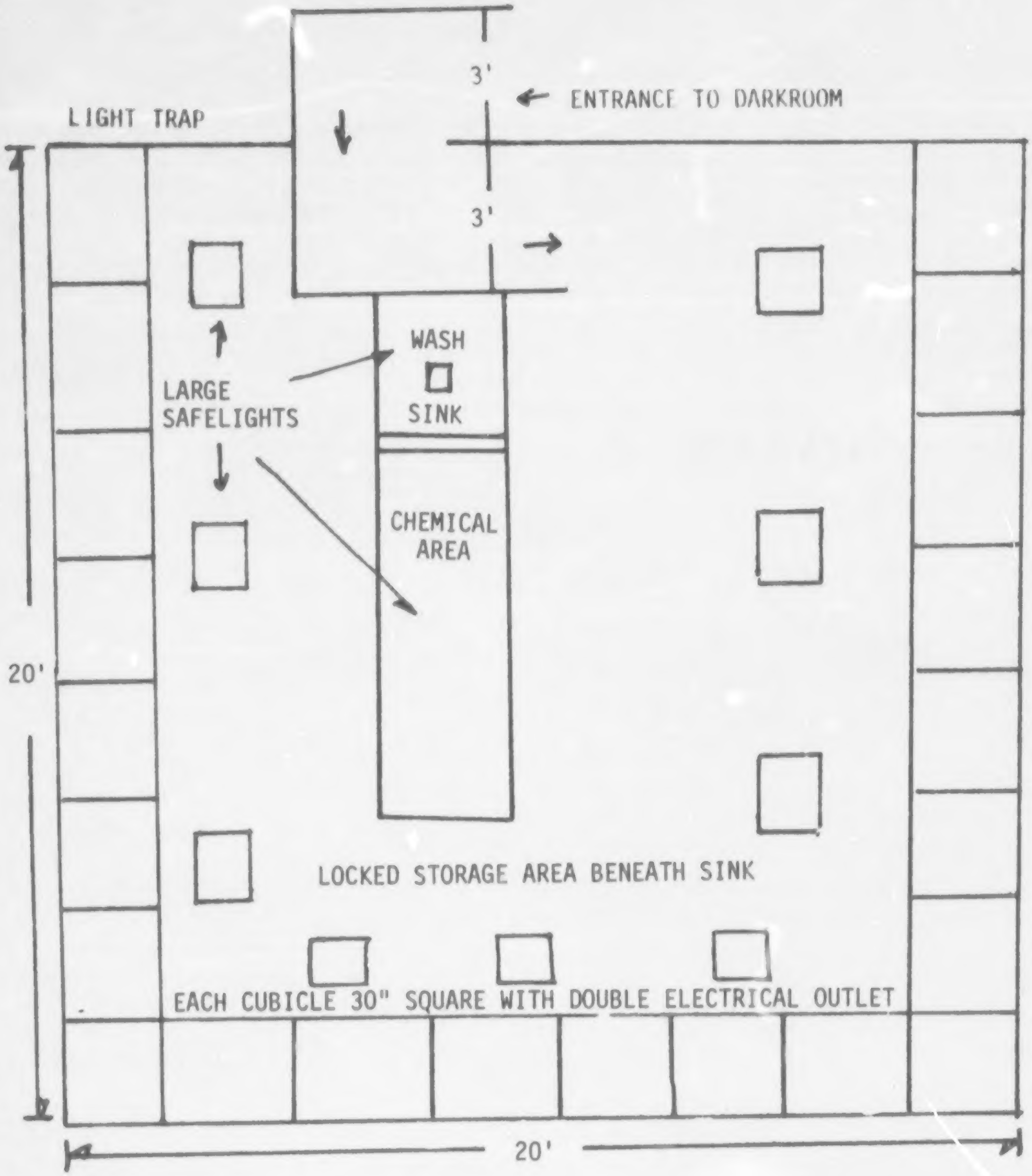
ARRANGEMENT FOR A MAKESHIFT DARKROOM . . . .

NOTE: "WET AREA" INCLUDING SINK AND TRAYS OF CHEMICALS IS SEPARATED FROM "DRY AREA" WHERE PAPER IS EXPOSED.

DARKROOM FOR 6 STUDENTS


ENLARGING BOOTHS
PARTITIONS
3 FEET HIGH
ENTRANCE
CIRCULAR LIGHT TRAP
36"
SINK
SIZE WILL VARY
LARGE SAFELIGHTS (SUSPENDED FROM CEILING) KODAK MODEL D
COUNTER FOR CHEMICAL TRAYS
STORAGE SPACE UNDERNEATH
15'
30"
30"
10'

DARKROOM FOR 20 STUDENTS


3'
ENTRANCE TO DARKROOM
LIGHT TRAP
3'
WASH
SINK
LARGE
SAFELIGHTS
CHEMICAL
AREA
20'
LOCKED STORAGE AREA BENEATH SINK
EACH CUBICLE 30" SQUARE WITH DOUBLE ELECTRICAL OUTLET
20'

GLOSSARY

ACETIC ACID	The acid used in dilute form for short-stop or stop-bath, to stop the action of the developer in the processing of prints. It is sometimes used in film processing but is not recommended. Acetic acid is also used in some fixers or hypo as in emulsion hardener for photographic paper.
ANGLE OF VIEW	The area covered by a lens on a camera, expressed in degrees, and determined by the focal length of the lens.
APERTURE	The size of the lens opening in camera or enlarger, normally controlled by an iris diaphragm, which determines the amount of light passing through; indicated by the 'f' number - the lowest number indicates the widest aperture.
ASA	Initials of the American Standards Association which standardized the speed or light sensitivity of photographic films now known as ASA ratings.
ASA NUMBER	Number that indicates the speed of the film.
AVAILABLE LIGHT	Natural or artificial light that is already there when you arrive on the scene.
BACKLIGHT	Illumination from a source behind the subject as seen from camera position, which tends to silhouette the subject, and may also dramatize it.
BAS-RELIEF	A three-dimensional effect in a photographic negative resulting from a second exposure to white light during development. The double exposure produces positive and negative images on one negative. The term "solarization" refers to this darkroom technique, the results of which are largely unpredictable.
BOUNCED LIGHT	Light reflected from a surface, such as a ceiling, wall, or photographic umbrella, in order to diffuse and soften its effect on the subject.
BROMIDE PAPER	Photographic printing paper coated with an emulsion containing silver bromide; insensitive to red or orange light.
BURNING IN	When making an enlargement, increasing exposure time for one small area of a negative.
CAMERA	An instrument by which photographs are made, consisting of a light-tight box fitted with a lens, a shutter, a film compartment, and various controls for precise operation. From the Latin word for room.

CARTRIDGE	A metal container, primarily for 35mm film, with removable end pieces. Sometimes called a cassette, a term more often applied to special reusable cartridges.
CASSETTE	A metal container (usually designed to hold lengths of 35mm film) which can be used repeatedly. Cassettes are made specifically for a particular camera and will not normally work in any other brand.
COMPOSITION	The way the elements in a photograph are arranged in relation to each other within the frame.
CONTACT PAPER	A photographic paper, one side of which is coated with silver chloride, used in making prints from a negative of the same size with a contact printer; light designs may be made with the printer, with or without a negative, or by placing objects directly on contact paper and exposing it with white light.
CONTACT PRINT	A print made on paper (or film) by perfect contact between the emulsion of the negative and that of the paper (or film).
CONTRAST	Difference between the lightest and darkest tones in a print or negative.
CONTRAST GUIDE	A system of numbers to describe contrast characteristics of photographic papers; the scale ranges from 0 through 6, with 2 as normal contrast, lower numbers indicating lower contrast, and higher numbers for higher contrast.
CROPPING	To trim or eliminate subject matter along the edges of an image in order to improve composition. A negative may be cropped when it is enlarged, and a slide may be cropped by masking along one or more edges.
DARKROOM	Light-tight room in which you process film and make prints and contact sheets.
DENSITY	The quality of opacity in a negative or slide describing its capacity to transmit light. Density occurs in areas of heavy silver deposits or deep color saturation.
DEPTH OF FIELD	Area in a photograph that is sharp in focus.
DEVELOPER	A chemical solution that converts silver halides affected by light from a latent or invisible image into a visible image in film or paper.
DIAPHRAGM	Camera mechanism used to control the amount of light that strikes the film.

DODGING	The process of masking an area of an image during enlarging or contact printing in order to reduce exposure and lighten that area.
DOUBLE EXPOSURE	Two or more images on one frame of film or piece of photographic paper; produced intentionally for reasons of composition and content, or accidentally in certain inexpensive cameras.
DRY MOUNTING	A method of mounting a print on cardboard by placing a thin sheet of dry mounting tissue between them and applying heat and pressure in a dry mounting press. Dry mounting tissue is a safe and precise and chemically inert adhesive for photographic prints.
EASEL	A device, usually made of metal, in which photographic paper is held flat and in position for making an enlargement; an easel may have two or more adjustable borders, or it may provide borderless prints.
ELECTRONIC FLASH	Supplementary light source that is charged from either an electrical outlet or a self-contained battery pack. Also called a speedlight.
EMULSION	A deposit of light-sensitive chemicals (silver halides) on photographic papers and films held in suspension in gelatin. Under suitable conditions of exposure to light, an image is formed in the emulsion.
ENLARGER	A piece of equipment designed to project an image from a negative or positive material onto a sensitized paper or film. A light source, negative carrier, and lens can be adjusted closer to, or farther from, the paper that is usually held in an easel.
EXPOSURE	The effect of light, according to its intensity and duration, on a photosensitive material, such as film or paper. The word is also used to symbolize the act of taking a picture.
FAST	A term used to describe films or papers highly sensitive to light, or lenses of large apertures.
FILM	A sheet or roll of thin material coated on one side with a light sensitive emulsion capable of recording an image when exposed in a camera.
FILM SPEED	Time it takes for the emulsion on film to react with light to form a latent image.
FILTER	A piece of glass or other transparent material, usually colored, used to absorb certain wavelengths of light and block others; filters are used for photographic effects or correction to suit a specific film and light source.

FIXER	A chemical solution which clears prints and films of chemicals that cause stains; also hardens the surface (emulsion) to prevent scratches.
FLASH	A term used for an instantaneous light provided by a flashbulb or cube or an electronic flash unit; flash is usually synchronized during exposure by camera mechanisms.
FLAT	A term used to describe a low-contrast image in a print or negative. May also refer to a large, free-standing, portable panel, usually painted white and used as a reflector in a photographic studio.
F-NUMBER	A number used to indicate the size of a lens opening. The larger the f-number, the smaller the opening or aperture. Interchangeable with the word f-stop.
FOCAL LENGTH	The distance between the lens and the point where the image is formed on the film when the lens is focused on infinity.
FOCUS	The adjustment of a camera lens to provide an image that is sharp on the focal plane. Also, the convergence of light rays to a point.
FOG	A hazy darkening of a negative or print caused by extraneous light or chemical action. Fog may be caused by light leaking into a film holder or cartridge, by using outdated film, or by storing film in hot, humid conditions.
GLOSSY	Describes a printing paper with a smooth surface, suitable for ferrotyping. A print with a mirrorlike luster such as is produced by ferrotyping.
GRADUATE	A container, usually glass, enamelled steel, stainless steel or plastic, which is calibrated in fluid ounces or milliliters, or both, for use in measuring liquid volumes.
GRAIN	The thousand of tiny dots in a photograph that make up the image.
GUIDE NUMBER	A number used to calculate the f-setting (aperture) that correctly exposes a film of a given sensitivity (ASA rating) when the film is used with a specific flash unit at various distances from flash to subject. To find the f-setting, divide the guide number by the distance (usually in feet).
HARD	A term that describes high contrast in an image, or connotes harshness of lighting.
HIGHLIGHT	The bright accent in a subject itself, or the brightest areas of a photographic print or slide. A highlight is often rather small, and is represented by the most dense spots in a negative.

HYPO	A common term for the fixing bath used to stop development and dissolve undeveloped silver salts remaining in photographic negatives or prints. The term is derived from the original chemical, sodium hyposulfite, which is part of the fixing solution.
HYPO ELIMINATOR	Also called hypo clearing bath, hypo eliminator is a solution that speeds the removal of fixer from films and papers, and thereby saves washing time, and reduces the amount of water needed.
INCIDENT LIGHT	The light falling on a subject from any direction.
IMAGE	The visual representation on photographic film or paper of a scene or subject recorded by a camera; sometimes used to describe the visual impression received through the camera viewfinder.
INSTAMATIC	Most inexpensive and easiest to operate of all cameras. Can be bought for less than $25.
LATENT IMAGES	The invisible image upon and within a photographic emulsion before it is developed.
LENS	A single shaped piece of optical glass or molded plastic, or an assembly of such pieces (called elements), designed to gather and focus light rays in a camera to form an image of a subject on film, or in an enlarger to form an image on paper. Simple cameras may have one or two element lenses and more complex cameras have lenses with many elements.
LIGHT METER	Instrument specifically designed to "read" light and give you correct exposure information.
LONG LENS	Another name for a telephoto lens or one that is twice or more the focal length of a normal lens.
MASKING	The process of blocking out areas of an image or its edges with opaque pigment or tape.
MATTE	A term used to describe a nonglossy surface, usually of photographic paper; the surface may be fine or noticeably textured.
MONTAGE	The combining of selected prints for making a composite design by cutting and mounting them together, or by sandwiching black and white negatives or color positives between glass for printing or projecting. The resulting design: a photomontage.
MOTTLE	A mealy gray area of uneven development in a print or negative. Caused by too little agitation or too short time in the developer.

NEGATIVE	Exposed film on which the latent image has been developed. The tones of a negative are reversed; that is, light tones appear dark and dark tones appear light.
NEGATIVE CARRIER	A frame that holds the negative in an enlarger so it can be projected.
NORMAL LENS	Any lens with a focal length approximately equal to the diagonal measurement of the image on film within the camera on which it is used.
ORTHOCHROMATIC	A photographic emulsion that is sensitive to all colors but red.
OVERDEVELOP	To give more than the normal amount of development.
OVEREXPOSURE	Condition caused by letting too much light fall on film or printing paper.
PAN	To rotate a camera synchronized with a passing subject during exposure, so that the subject remains relatively sharp, but the background is blurred. Also a short term for panchromatic.
PANCHROMATIC	A photographic emulsion that is sensitive to all colors of light.
PAPER NEGATIVE	A negative image made on paper rather than film, either in the camera or by projection in the darkroom. May be contact printed to make a paper positive.
PARALLAX	The degree of difference between the viewfinder image and the image actually recorded by the lens of a camera, due to their varying axes. Parallax error does not occur with through-the-lens viewing.
PHOTOGRAM	An image made by placing objects on a sheet of paper (photographic) and exposing it to light.
PHOTOMONTAGE	A composite image made by cutting out and assembling parts of several photographs.
PINHOLE CAMERA	A camera with a tiny hole in place of a lens, made in various shapes and sizes for experimental purposes.
POLARIZING FILTER	A disc of glass designed to reduce reflection and alter the appearance of sky or surfaces by affecting certain polarized light rays without altering color. Also called a polarizer or pola filter.
POLAROID	Type of camera that processes the print in the camera itself, and delivers the print within minutes after you shoot the photograph.

POSITIVE	Any image with tones corresponding to those of the subject. Opposite: Negative.
PRINT	An image, usually positive, on photographic paper.
PROCESS	The sequence of chemical steps used to develop and fix films or papers in the photographic idiom.
PROJECTION PRINT	A print made in an enlarger in which an image is projected to a sensitized material, as opposed to a contact print.
PUSH	The term used to indicate increased film developing time, i.e., to push or force development to compensate for under-exposure.
RANGEFINDER	An optical device used to focus a camera lens in which two images are made to coincide precisely when a subject is in focus.
RC PAPER	Resin-coated printing paper which is made with a special base that limits absorption of liquid providing for accelerated washing and drying.
RECIPROCITY LAW	A law which states that exposure varies uniformly with changes in either time or intensity.
REEL	The metal or plastic holder with a spiral track into which film is loaded for development in a small tank.
REFLEX CAMERA	A type of camera in which the image gathered by the lens is reflected to a mirror and onto a ground glass for viewing. In a single-lens reflex, a prism may be used to correct the left-to-right orientation of the image.
REFRACTION	The property of light that causes light rays to bend when they pass through glass.
REGISTER	To superimpose images so they are aligned precisely. Colors or shapes not so aligned are said to be off-register or out of register.
RETICULATION	A pattern of fine wrinkles in a negative caused by temperature extremes during processing, or by adverse chemical effects. The phenomenon is rare with normal darkroom practice.
SABATTIER EFFECT	The partial reversal of an image in a film emulsion caused by brief exposure to light during development; often referred to as solarization, which is not technically correct.
SAFELIGHT	A lamp of low wattage and suitable color which is used for (reduced) illumination in the darkroom without exposing certain light-sensitive films and papers. Note manufacturer's recommendations for use of a safe light.

SEPARATION	The distinction between light and dark tones in an image. Also, the process of recording three primary colors on black-and-white films through the use of filters for color printing such as dry transfer.
SHORT LENS	A lens of less-than-normal focal length; also called a wide-angle lens.
SHUTTER	A mechanism that opens and closes within a camera to provide the time interval necessary for exposure. Time intervals are called shutter speeds.
SHUTTER SPEED	The length of time the camera shutter is open letting light fall on the film.
SILHOUETTE	A scene or photograph in which the background is much more brightly lit than the subject.
SLR	Single-lens reflex camera; a compact camera with a through-the-lens viewing system.
SOFT	Describes an image that is not sharp or in precise focus. Also refers to an image or a photographic paper of low contrast.
SOLARIZATION	The reversal of an image, often caused by extreme overexposure, the term used popularly, but not precisely, for the Sabattier effect.
SPOTTING	The process of painting out tiny spots or defects in a print using a special dye and fine brush; dark spots are eliminated by etching the emulsion to blend the defect into its surroundings. An etching knife or tool is used.
STOCK	A concentrated form of a chemical solution which is diluted for use. Also the base or support material, such as paper, on which sensitized emulsion is coated.
STOP BATH	A diluted solution of water and acetic acid that stops developing action, particularly of prints, before they are transferred to the fixer. Also called short-stop.
STOP DOWN	To reduce the size of a lens aperture for decreased exposure.
STOPPING ACTION	Arresting motion in a moving subject by using a fast shutter speed.
TACKING IRON	A small, electrically heated, thermostatically controlled tool used to tack or attach dry-mounting tissue to the back of a print or to the mount board, so as to hold it in place while the print is being trimmed and heated in the dry-mount press.

TANK	A light-tight container made of metal or plastic in which film is placed on reels for processing. Also larger containers without tops for processing sheet film.
TELEPHOTO LENS	Has a long focal length that brings far away objects close and magnifies them. Also called a long lens.
TEST STRIP	A strip of paper on which one or more separate exposures are made to determine the correct exposure, especially for an enlargement.
THIN	A term used to describe a negative of low overall density.
TIME AND TEMPERATURE	The two factors that vary in the development process for film or paper. Manufacturers provide charts of time and temperature relationships which photographers revise according to their own needs and experience.
TIME EXPOSURE	An exposure usually longer than one second, the longest camera-activated interval on most cameras, after which the photographer must time the exposure by using a watch or counting. Some cameras with electronic shutters make automatic time exposures from a few seconds to one minute.
TONER	A chemical solution used to tint a black-and-white print; the most common toners are sepia and selenium blue.
TRANSPARENCY	The common term for a color slide which is viewed by transmitted light, such as by projection.
TRIPOD	Three-legged camera support.
TUNGSTEN LIGHT	A general term for artificial illumination from any source; derived from the use of tungsten filament in photoflood bulbs.
UNDERDEVELOP	To give less development than normal.
UNDEREXPOSURE	Condition caused by letting too little light fall on film or printing paper.
VALUE	The degree of darkness of a gray tone or a color in a print, negative, or slide. The value scale ranges from highlight white to deep black.
VARIABLE CONTRAST PAPER	A type of printing paper with which contrast may be altered by the use of VC filters calibrated in separate grades of contrast.

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Image. 900 East Avenue, Rochester, N.Y. 14607. The publication of the International Museum of Photography at George Eastman House. Interesting and contemporary and historical material.

Infinity. 60 East 42nd Street, New York, N.Y. 10017. Published by the American Society of Magazine Photographers. Photojournalism is featured.

Modern Photography. 130 East 59th Street, New York, N.Y. 10022.

Petersen's Photographic. 8490 Sunset Boulevard, Los Angeles, California 90069.

Popular Photography. One Park Avenue, New York, N.Y., 10016.

FILMS AND FILM STRIPS

It's a Snap. Eastman Kodak Company, sound color, 16 minutes, free loan. This film tells of several methods for improving shots of family groups, using a typical American family with two youngsters. Many important fundamentals of picture-taking techniques and camera operation are discussed.

Invitation to Flash Photography. Brooks Institute of Photography, sound, color, 15 minutes. This film stresses the basic principles of flash photography and uses of different reflectors and flash bulbs. It suggests indoor and outdoor scenes.

Naval Photography in Science. (MN 5384c). Department of Navy, sound, black and white, 28 minutes, free loan. This film explains the various types of photography, sush as time lapse, high speed, slow motion, stroboscopic, microscopic, and underwater.

The Camera. Harmon, silent with captions, black and white, purchase $5.00, (81 frames). This filmstrip shows the principles of the camera from the simplest pinhole type to the camera with the variable shutter speed, lens, aperture, and focus. It assumes that the viewer knows nothing about the camera.

Photographic Darkroom Procedures. (In two sets) McGraw-Hill Book Company, silent with captions, black and white, purchase set 1 for $30, set two for $35.

Titles for Set 1:
- Developing Roll Film (62 frames)
- Developing Sheet Film and Film Packs (46 frames)
- Contact Printing (67 frames)
- Projection Printing (36 frames)
- Spot Printing and Dodging (58 frames)

Titles for Set 2:
- Advanced Projection Control (50 frames)
- Quality Control in Negatives
  - Part 1 (64 frames)
  - Part 2 (62 frames)
- Print Contrast Control (58 frames)
- Composition in Printing (54 frames)
- Spotting of Prints (58 frames)
- Print Presentation (50 frames)

Photography for 9th Grade. Boise Schools IMC, Color, furnished to each junior high photography teacher.

DIRECTORY OF FILM AND FILMSTRIP SOURCES

Eastman Kodak Company
Camera Club and School Service
343 State Street
Rochester, New York

Brooks Institute of Photography
Department of Films
2190 Alston Road
Santa Barbara, California

Department of Navy
937 Harbor Drive
San Diego, California

Harmon Foundation, Inc.
Division of Visual Experiment
140 Nassau Street
New York, New York

McGraw-Hill Book Company
Text-Film Department
330 West 42nd Street
New York, New York

Boise Schools
IMC
1207 Fort Street
Boise, Idaho

LIST OF MANUFACTURERS

Agfa-Gevaert, Incorporated
275 North Street
Teterboro, New Jersey 07608

Eastman Kodak Company
343 State Street
Rochester, New York 14650

Edwal Scientific Products
12120 South Peoria Street
Chicago, Illinois 60643

E. I. Du Pont de Nemours & Co.
Photo Products Department
Wilmington, Delaware 19898

The FR Corporation
951 Brook Avenue
Bronx, New York 10451

GAF Corporation
Industrial Photo Division
Customer Service
140 West 51st Street
New York, New York 10020

Luminos Photo Corporation
25 Wolffe Street
Yonkers, New York 10705

Rockland Colloid Corporation
599 River Road
Piermont, New York 10968

3 M Printing Products Division
3 M Center
St. Paul, Minnesota 55105

Spiratone Incorporated
135-06 Northern Boulevard
Flushing, New York 11354

Supreme Photo Products
543 West 43rd Street
New York, New York 10036

Supre-Print Stabilization Products
543 West 43rd Street
New York, New York 10036

EXPERIENCES
TWO AND THREE DIMENSIONAL ART

APPRECIATION

Definition:

To become visually discriminating about works of art, produced by one's self and others.

Objectives:

A. To give the student exposure to fine art which will bring about a sensitive awareness and leads to implementation in the student's work.

B. To encourage the student to produce a better work of art because of past exposure.

C. To foster enjoyment of art for the producing as well as the non-producing student.

Materials Needed:

Slides, prints, filmstrips, movies, video tapes, books, magazines, and actual works of art, both professional and student.

Experiences:

A. The students should be taken on as many field trips as possible to expose them to professional works of art.

B. The students should be given the opportunity to research lives and styles of various artists, doing reports on them and culminating the activity with a painting of their own in the style of the artist researched.

C. Other experiences should be planned to utilize the materials listed above.

References:

Time Life Series of Artists, Time Inc., Little Brown and Co., Boston, Mass.

The New International Illustrated Encyclopedia of Art, Greystone Press, N.Y.

EXPERIENCES
THREE DIMENSIONAL ART

SCULPTURE

Definition:

Sculpture, the carving out of a solid, is a three-dimensional language concerned with the organization of masses or volumes. The sculptor composes his work in terms of volumes--positive and negative--planes, contours, light areas, dark areas, and textures. Technical handling, weight, resemblance, proportion, rhythm, texture, and the like, should all be of secondary importance to volume in sculpture. A feeling for form and volume cannot be acquired by merely learning a few rules. This feeling springs from continuous experiences with sculpturing; it must become a part of the student's makeup, and it must be fused with technical mastery of his craft. The student can read about other's work or look at it, but it is through working himself that he can more fully understand it.

Objectives:

A. The student will respect the qualities of different materials (their possibilities and limitations).

B. The student will recognize the principles of design in three-dimensional work.

C. The student will appreciate the function of sculpture throughout the ages.

D. The student will understand the proper use of tools and materials for sculpture.

Materials:

Todays sculpture shows a wider variety of materials than ever before in history. Wood, stone, bronze, and clay have been standards through the years, but today interesting things are being done with many other materials, some of which are listed below. The practice of combining several materials in one piece is also a new and exciting one. Since tools suitable for one sculpturing material are sometimes unsatisfactory for another, the materials will be divided into two groups and the tools listed in each group are appropriate for those materials.

Group A: wood, styrofoam, flexible plastics, candles or beeswax.

Tools: flat chisels, gouges, pocket knife, parting or V tools, files and rasps, sandpaper, oilstone, calipers, clamps or vises for holding work.

Group B. stone, clay, block salt, ice and snow, insulating brick, plaster of Paris, rigid plastic, cements, special mixtures, soft metals, sculp-metal.

Tools: sgraffitto tool, toothed scrapers, carving chisels, calipers, rasps, hammers, mallets, oil stone, files, clamps or vises.

Experiences:

A. Bas-relief

1. This sculpture is flattened and intended to be looked at from only one direction. Cut a milk carton in half and half-fill it with pottery clay. Use various objects to texture the surface of the clay to create a design.
2. Pour a plaster-of-Paris mixture into this mold and allow it to harden. A loop of wire or a pop can tab may be inserted as a hanger. When set, the carton can be removed and the relief can be painted with tempera.

B. Carved Relief

1. Pour plaster of Paris into a box lid which has been either shellaced or lined with plastic wrap.
2. When the plaster is set, remove from lid, transfer design pattern and carve. The carving can be done with a knife or spoon and a piece of saw blade and nails may be used to add texture. You may purchase tools especially for carving plaster. Dampen the plaster when it becomes difficult to carve.
3. When finished, it may be treated with a thin oil stain.

C. Styrofoam and Foam Glass

1. These materials are very light and have a rich, sparkling, surface texture. They can be carved easily with knives, rasps, or sandpaper.
2. Wooden dowels, nails, or wires may be pushed into them for additional effect. Plaster of Paris may be brushed on the surface.

D. Direct Carving or Sculpture in the Round

1. This sculpture is one which can be looked at from any or most angles. In the recipe section you will find various mixtures which can be used for carving sculptures. These may be carved with a knife, spoon, rasp, sandpaper, or a saw may be used.
2. For more experienced students, clay or plaster may be used. Firebricks, soft stone such as soapstone, alabaster and soft limestone; or a harder material such as sandstone may suit your project better.

E. Expanded metal

1. This material is available in sheets at building supply houses. It is easily cut with tin snips and pliers are used to help bend and shape it.
2. One may also wrap string around it and coat it with colored plaster of Paris.

F. Wire

1. Stock a good supply of 18-gauge and 26-gauge wire, a tube of plastic aluminum, and a can of spray enamel paint. Gold, silver, bronze and coppertone, and black best simulate the metal tones. Form an understructure of the basic shape of an animal, then coil wire around it, cutting and shaping as needed.
2. When the form is complete, dab plastic aluminum here and there, spray, and let dry.

References:

Contemporary American Sculpture, Brumme, Ludwig, New York: Crown, 1948.

The Materials and Methods of Sculpture, Rich, Jack C., New York: Oxford, 1947.

LEATHERCRAFT

Definition:

The process of creating works of art from leather.

Objectives:

A. The student should gain a knowledge of leather types, qualities, uses, and history.

B. The student should learn the technical information, tools, and processes involved in leathercraft.

C. The student should acquire skills in designing and fabricating from different types of leather.

Materials Needed:

Different types of leather (tooling leather, suede, clothing leather), skiving knife, head knife, shears, swivel knife, stamping tools, block plane, revolving punch, drive punch, oblong bag punch, various kinds of fittings and hardware (eyelets, snaps, rivets, D rings, belt buckles, key plates), lacing, braiding and stitching materials, dyes, wax, and lacquer for finishing.

Experiences:

A. Cutting Leather
   1. The teacher will demonstrate various ways of cutting leather using skiving knife, head knife, shears, and stripping with draw gauge. (strip-ease)
   2. The student will demonstrate understanding of the proper ways of cutting leather.

B. Tooling Leather
   1. The teacher will demonstrate various ways of tooling leather, including proper preparation of transfering design, tooling and outlining, flat model works, embossing, stippling, and use of embossing wheel.
   2. The student will demonstrate understanding of proper ways of tooling leather.

C. Carving and Stamping
   1. The teacher will demonstrate various carving and stamping techniques, beginning with the cutting of the outline with a swivel knife, and continuing with the use of the following tools: camouflage, beveler, pear shader, veiner, background tools, seeder, and dress cuts with the swivel knife.

2. The student will demonstrate an understanding of carving and stamping techniques.

D. Skiving and Trimming Edges

1. The teacher will demonstrate various ways of skiving and trimming edges, using the skiving knife and/or block plane, the edge creaser, and the edge sticker.
2. The student will demonstrate an understanding of skiving and trimming edges.

E. Punching Leather

1. The teacher will demonstrate techniques of punching leathers using the revolving punch, drive punch, and oblong bag punch.
2. The student will demonstrate an understanding of the proper methods of punching leather.

F. Fittings and Hardware

1. The teacher will demonstrate ways of setting and attaching various types of hardware, including setting eyelets, snaps, rivets, clasps, and attaching D rings, belt buckles, and key plates.
2. The student will demonstrate an understanding of the proper ways of setting and attaching various types of hardware.

G. Lacing and Saddle Stitching

1. The teacher should demonstrate proper ways of lacing and saddle stitching, including the punching of lacing holes, determining the amount of lace, whip stitching, single cordovan stitching, double cordovan stitching, and saddle stitching.
2. The student will demonstrate an understanding of the various ways of lacing and stitching.

H. Braiding

1. The teacher will demonstrate ways of braiding, including round, flat, and square braiding.
2. The student will demonstrate an understanding of the proper ways of braiding.

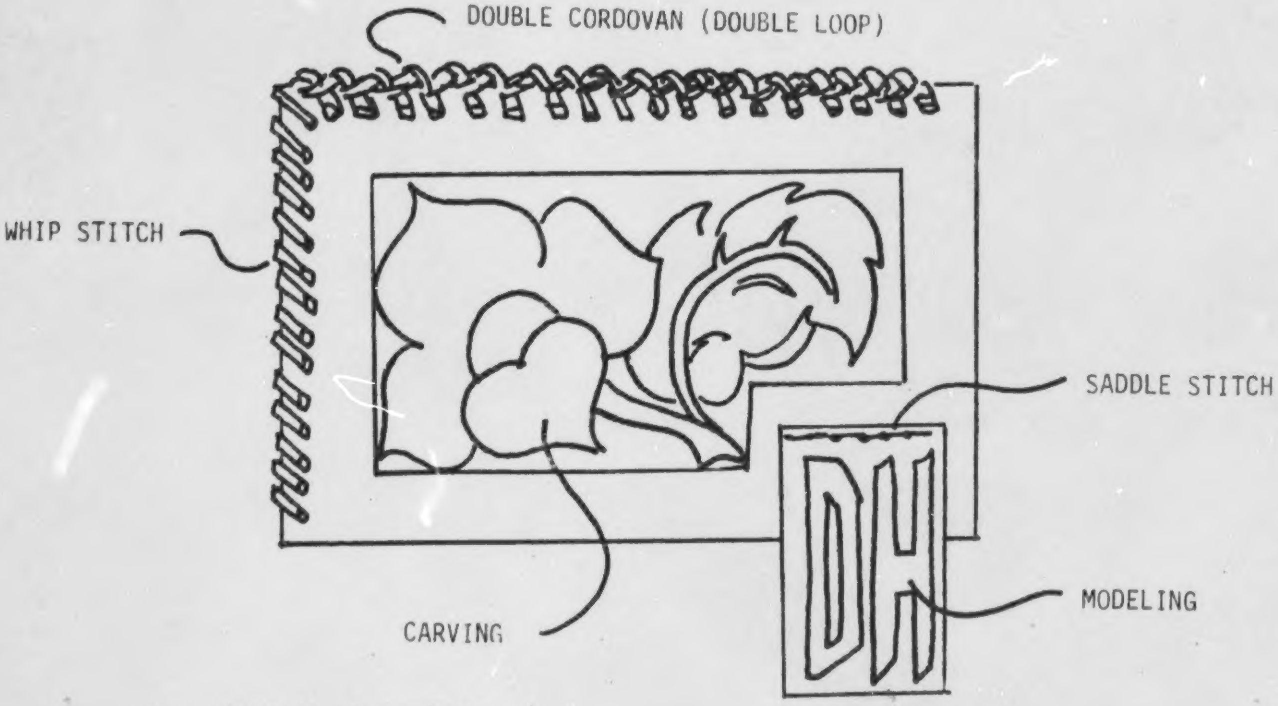
I. Finishing Leather

1. The teacher will discuss and demonstrate ways of finishing leather, including cleaning, dyeing and coloring, applying wax and lacquer finish.

2. The student shall demonstrate an understanding of the ways to finish leather.

J. Planning, Designing and Completing Practice Project

The student shall prepare a design, select materials and complete a practice project involving many of the techniques involved in leathercraft. The drawing below illustrates such a project.



K. Additional Projects

The student should complete other projects of personal interest, preparing designs, bills of materials needed, and planning procedures for completion. Such projects could include the making of belts, billfolds, footwear, leather garments, and leather sculpture.

References:

Modern Leather Design, Donald Wilcox, Watson-Guptill Pub., New York.

Leatherwork and Leatherwork Manual, Stohlman, Patten, and Wilson, Tandy Leather Company, Fort Worth, Texas. (Transparencies also available with Leatherwork Manual.)

ART METALS, JEWELRY, AND LAPIDARY

Definition:

Artwork created by the working of metal and stones.

Objectives:

A. The student should recognize and identify characteristics of materials suitable for art metal and jewelry, as well as different types of stones.

B. The student should develop skill in cutting, forming, and polishing stones.

C. The student should develop skill in forming, fabricating, and designing art metals and jewelry.

D. The student should learn and demonstrate a basic knowledge and understanding of technical information relating to art metals, jewelry, and lapidary.

Materials Needed:

A. Various types of metals such as silver, copper, and aluminum in various forms, inculding sheets, wire, and beads.

B. Precious or semi-precious stones, including garnet, opal, agate, and petrified wood.

C. Various types of jeweler's equipment, including hammer, pliers, jeweler's saw, stamping and embossing tools, engraving tools, and etching solution (acid).

D. Soldering equipment, including soldering iron, presto-lite torch, soft solder, silver solder, and flux.

E. Casting equipment, including centrifugal casting machine and accessories.

F. Polishing equipment, including wax and buffing compounds. Polishing agents, and buffing wheels.

G. Enamel materials and lacquer.

H. Kiln or covered hot plate.

I. Lapidary equipment, including diamond saws, grinding wheel, polishing wheel and agents, and tumbler.

Experiences:

A. Cutting metal

1. The teacher will demonstrate ways of cutting metal, using jeweler's saw or shears.
2. The student will demonstrate an understanding of ways of cutting metal.

B. Tooling metal
   1. The teacher will demonstrate ways tooling metal (copper and aluminum foils) using modeling tools.
   2. The student will demonstrate an understanding of ways of tooling metals.

C. Engraving and etching
   1. The teacher will demonstrate ways of engraving and etching metals, using engraving tools and etching solution.
   2. The student will demonstrate an understanding of engraving and etching.

D. Metal Spinning
   1. The teacher will demonstrate ways of spinning metal, using wood lathe and metal spinning tools.
   2. The student will demonstrate an understanding of the ways to spin metal.

E. Forming metal and jewelry
   1. The teacher will demonstrate ways of forming metal and jewelry, including raising, pounding, spinning, bending, and fluting.
   2. The student will demonstrate an understanding of forming metal and jewelry.

F. Fabrication of metal and jewelry
   1. The teacher will demonstrate ways of fabricating metal and jewelry, including soldering, riveting, seaming.
   2. The student will demonstrate an understanding of fabrication of metal and jewelry.

G. Annealing metal
   1. The teacher will demonstrate ways of annealing metal, including heating to proper temperature and quenching.
   2. The student will demonstrate an understanding of annealing metal.

H. Casting
   1. The teacher will demonstrate casting techniques, including preparing wax object to be cast, preparing the metal, casting the object, and the clean-up and polishing of cast objects.
   2. The student will demonstrate an understanding of the casting process.

I. Enameling

1. The teacher will demonstrate procedures for enameling, including preparing and cleaning the metal, mixing and preparing flux, applying the enamel surface, decorating, stacking and firing in kiln, and the use of the torch.
2. The student will demonstrate an understanding of enameling techniques.

J. Finishing metal

1. The teacher will demonstrate ways of finishing metals, including cleaning and polishing, applying lacquer, applying antique finish, and attaching findings.
2. The student will demonstrate an understanding of ways of finishing metals.

K. Stone Cutting

1. The teacher will demonstrate procedures for cutting stone, including the sawing of the stone slab and the trimming of the stone.
2. The student will demonstrate an understanding of the procedure for cutting stone.

L. Shaping and Finishing the Stone

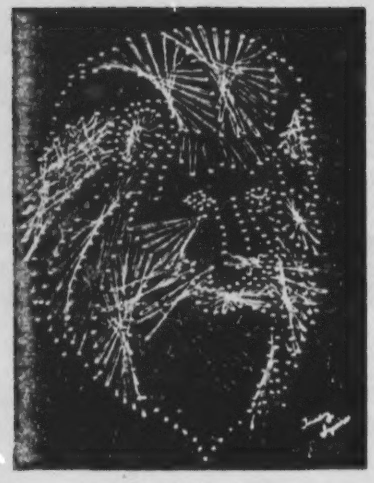
1. The teacher will demonstrate procedures for shaping and finishing stones, including rough grinding, finish grinding, sanding, polishing and mounting.
2. The student will demonstrate an understanding of the procedures for shaping and finishing a stone.

M. Tumbling Process

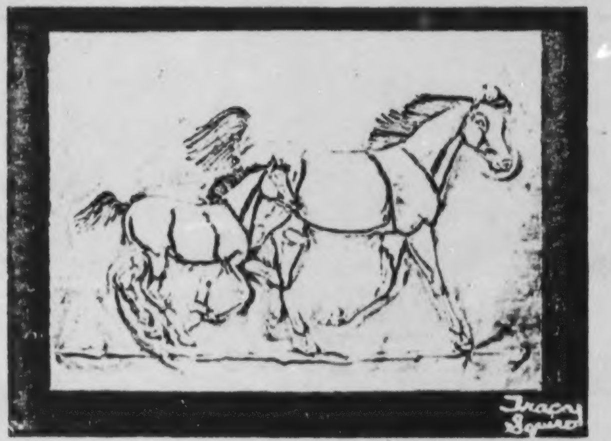
1. The teacher will demonstrate the use of the tumbler, including preparing and loading, changing grits, polishing and cleaning stones.
2. The student will demonstrate an understanding of the use of the tumbler.

N. Projects

The student shall complete projects of personal interest resulting in completed pieces in art metal, jewelry, lapidary, or combination of same. These projects shall include preparation of plan of design, determination of cost of materials, and outline for construction or fabrication.



Wire Sculpture
(in manner of string art)



Copper Tooling

References:

Jewelry Anyone Can Make, Maggie Bennett, Dukane Press, Florida.

Jewelry-Making by the Lost Wax Process, Greta Pack, Van Nostrand Reinhold, New York.

Jewelry Craft for Beginners, Mosseson and Elbert, Bobs-Merrill, Indianapolis.

Copper Enameling, Forber, Professional Publications, Inc., Ohio.

Creative Casting, Choate, Crown Publishers, New York.

CERAMIC ART

Definition:

Ceramics basically indicates the making of objects either functional or non-functional from clay. The properties of clay are then what make ceramic art appealing. Probably the most unique quality that clay has is plastisity which allows a freedom within certain limitations that few other medias can match. In its fired state, clay is one of the most ageless materials. Its three dimensional qualities plus the effects of glaze, color and texture, makes ceramics potentially the richest of all forms. The knowledge and skills needed to properly teach ceramics is great. This section of the guide is only an indication of what, generally, should be covered and in the secondary ceramic art program, assuming time, space, equipment, and allowable funds. Generally, the teaching of ceramic art can be broken down into three categories. They are:

1. Appreciation
2. Skills
3. Technical Information

Materials Needed:

Various kinds of clay, glaze components, kilns and kiln furniture, wheels, and decorating wheels, hand tools, water source and containers, drying racks, general and specific storage, vats, canvas covered wedging and potting tables.

Experiences:

A. Appreciation

How can the student create a sensitive successful work of art in clay if they don't know what one is? It is a fact that people become most discriminating about those things to which they have had the most exposure. It is quite possible that many students' only idea about ceramics as an art form comes from their grandmothers knick-knack shelves, or from somebodys figurine that has been glazed and decorated in a hobby shop. It is strongly recommended that any program include visual aids that will enable to student to see and hopefully gain an appreciation for all types and styles of cermaic art done throughout the ages.

B. Skills

First of all the student should have an opportunity to experience and gain skills in the basic construction techniques. It is recommended that experiences be planned that will somewhat familiarize the student with slab, throwing, pinch and coil techniques. Project ideas for these techniques may be found in most good general books on ceramics. Casting techniques can also be taught but only if students produce their own molds from originals they have made. Skills other than construction techniques that should be stressed are:

1. Construction generalities such as the proper ways to attach one piece of clay to another, or ways to dry an object out properly so it won't crack.
2. Skills in using tools and caring for same.
3. Glazing and decorating skills.
4. Firing skills, with the recommendations that each student have some direct involvement with the firing process.
5. Skills in the preparation and care of clay. These should include pugging and the mixing of clay bodies.

C. Technical Information

The student should be given an in-depth understanding of the technical aspects of the art. This is important for two reasons. First, the student should be able to intelligently verbalize with others about various aspects of the art. Second, the student should have a good enough background in the technical aspects of ceramic art to enable him to continue with it as a hobby or profession after school. It is understood that all of the recommended categories of information may not be taught because of time limitations or because of varying degrees of technical emphasis instructors may choose to include in their programs. It is recommended that some information be given to the student on the following:

1. Information on the origins, deposits, and types of clay and clay bodies.
2. Information dealing with the technical aspects of various types of firings.
3. The methods of prospecting for and the testing of clay for various uses.

4. General analysis of the basic chemical makeup of glazes and clays.
5. A study of the coloring oxides and what they do under various conditions.
6. Information on the various types of glazes.
7. A study of the terminology needed to describe basic ceramic processes such as glazing and decorating techniques, construction stages and types of finished wares.

PINCH AND SLAB POT

References:

Ceramics, A Potter's Handbook, Glenn C. Nelson, Holt, Rinehart and Winston, Inc., New York.

Introducing Handbuilt Pottery, Tony Jolly, Watson-Guptill Publications, New York.

Pottery Step-by-Step, Henry Trevor, Watson-Guptill Pub., New York.

The Technique of Handbuilt Pottery, Mollie Winterburn, Watson-Guptill Pub., New York.

Making Pottery Without a Wheel, Ball and Lavoos, Van Nostrand Reinhold, New York.

Clay in the Classroom, George Barford, Davis Publications, Massachusetts.

WOOD

Definition:

The creation of art objects in which wood is the primary medium. This would include:

1. Wood sculpture, where three-dimensional form is created both in the round and bas relief; and,
2. Designs of both contemporary and modern antique furniture created from a wide variety of woods. The restoration of antiquated artifacts is no small part of wood usage, and is most demanding of the artist if done well.

Materials Needed:

Woods; hard, soft, exotic. Adhesives and finishes, abrasives, hand and power tools, fasteners, nails and screws.

Experiences:

A. The teacher should demonstrate:
    1. The safe use and care of hand and power tools.
    2. The types and qualities of available woods and their uses.
    3. The sequential process involving forming, fabricating, smoothing, and finishing projects in wood.

B. Having seen the demonstrations by the instructor, the student should be able to design, form and finish projects within his physical capability level ranging from simple orientation projects to the more complex, with safety and creativity.

References:

Wood Carving, Alan Durst, Studio Publications, New York.

Wood Carving and Whittling Made Easy, Franklin Gottshell, Bruce Pub. Co., Wisconsin.

Creative Wood Design, Ernest Rottger, Reinhold Book Corp., New York.

WEAVING (PAPER PLATE)

Definition:

A. To make (a fabric) by interlacing threads or yarns; make on a loom.

B. To become interlaced or intertwined.

Objectives:

A. To make the child aware of an ancient art that is both functional and decorative.

B. To become aware of how we depend upon weaving in our everyday life.

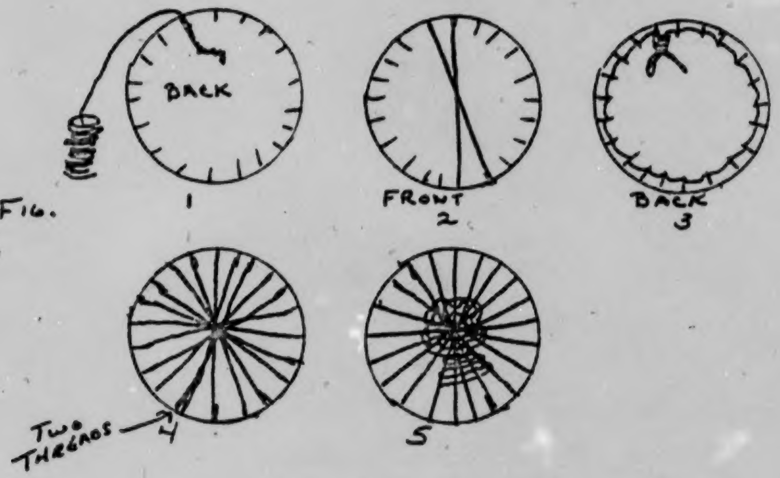
Materials Needed:

Paper plate, scissors, carpet warp, assorted yarns.

Experience:

Cut paper plate with an odd number of notches of 1/2 or 1/4 inch around edge. Using carpet warp, start from the back, leaving about three inches of warp to tie off later. Bring warp around to front of plate and go directly back and forth as shown below. Complete warping. One notch will have two threads. (Fig. 4)

FIG.



References:

Weaving Without a Loom, Sarita R. Rainey, Davis Publications, Worcester, Massachusetts.

WEAVING (LOOM)

Definition:

- A. To make (a fabric) by interlacing threads or yarns; make on a loom.
- B. To become interlaced or interwined.

Objective:

- A. To become aware of an ancient art that is both functional and decorative.
- B. To become aware of how we depend upon weaving in our everyday life.

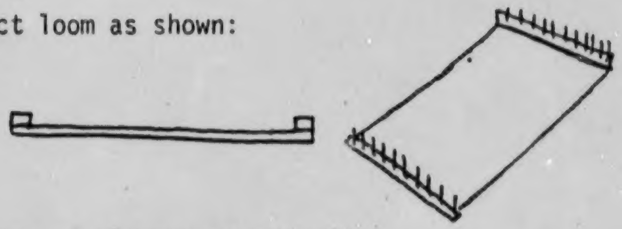
Materials Needed:

Loom (flat - box like) scissors, ruler, yarns.

Experiences:

- A. Construction of a loom
- B. Basic textile experience
  - 1. Procedure:

    Construct loom as shown:



    Flat sheet of plywood or masonite; two ends of wood; headless nails driven into each end-odd number.
  - 2. Warp loom with carpet warp; tie beginning thread to second thread and NOT to nail.
  - 3. Begin weaving.

References:

Weaving Without a Loom, Sarita R. Rainey, Davis Publications, Worcester, Massachusetts.

Creative Design In Wall Hangings, Lili Blumenau, Crown Publishers, New York.

Introducing Weaving, Phyl Shillinglaw, Watson-Guptill Pub., New York.

Off-Loom Weaving: A Basic Manual, Elfleda Russell, Little, Brown and Co., Boston, Massachusetts.

Off-The-Loom Creating With Fibre, Shirley Marein, Viking Press, New York.

Films:

Weaving, Paramount Communications, 5451 Marathon St., Hollywood, Calif. 90038

Fiber Art, Churchill Films, 662 North Robertson Blvd., Los Angeles, Calif. 90069.

WEAVING (PICTURE/FRAME)

Definition:

Needleweaving is weaving with yarn needle or toothbrush handle within a picture frame or other frame-like structure.

Objective:

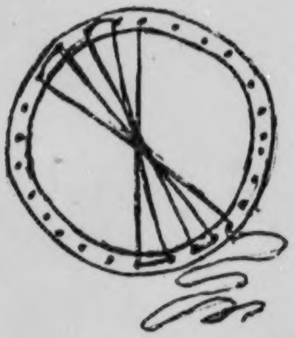
To make a picture or design by interlacing yearns or threads within a given structure.

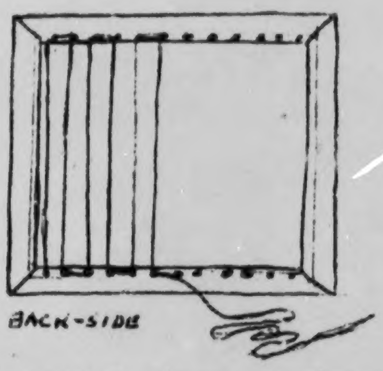
Materials Needed:

Frame, such as a picture frame with holes drilled from 1/4 to 1/2 apart. Carpet warp for the warp, yarns, needle, scissors.

Experience:

Construction of a loom by using a picture frame, embroidery hoop, etc.





References:

Basic Book of Fingerweaving, Esther Dendel, Simon and Shuster, New York.

Free Weaving on Frame and Loom, Hoppe, Ostlude, Melen, Van Nostrand Reinhold, New York.

Needleweaving, Edith John, B.T. Baxford, Ltd., London.

Needleweaving . . . . Easy as Embroidery, Esther Dendel, Countryside Press, Philadelphia, PA.

Off-Loom Weaving, Marion Berstein, Sterling Pub., Co., New York.

Off-The Loom Creating With Fibre, Shirley Marein, Viking Press, New York.

Weaving Off-Loom, Dona Meilach & L. Snow, Henry Regnery Co., Illinois.

WEAVING (INKLE)

Definition:

To make a band of fabric woven on an inkle loom.

Objective:

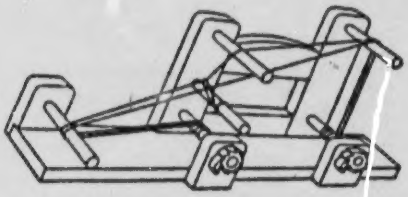
The student will learn inkle weaving, a simple, easy way of weaving; an old American art going back at least 300 years.

Materials Needed:

Inkle loom, yarns, beater (ruler may do), shuddle.

Experiences:

A. Threading of a loom.
B. Making of heddles.



OPEN END INKLE LOOM
(Available from suppliers--also can be constructed in shop)

References:

Band Weaving: The Techniques, Looms & Uses for Woven Bands, Harold & Sylvia Tacker, Van Nostrand and Reinhold, New York.

Inkle Loom Weaving, Nina Holland, Watson-Guptill, New York.

Weaving Bands, Liv Trotzig & Astrid Axelsson, Van Nostrand and Reinhold, New York.

Weaving Inkle Bands, Harriet Tidball, The Shuttle Craft Guild, Lansing, Michigan.

WEAVING (BACKSTRAP)

Definition:

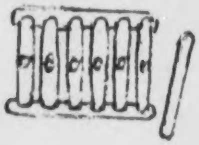
To make a fabric or design by interlacing threads or yarns on a backstrap loom (a two-stick body loom, attached to the weaver by a back strap - a piece of cloth that runs around hips of weaver).

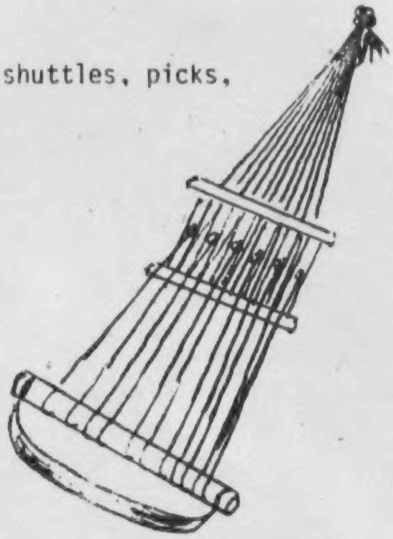
Objective:

To acquaint students with primitive weaving techniques which have spanned many centuries.

Materials Needed:

Secondary cloth bar, two loom bars, bobbins, shuttles, picks, combs, popsicle sticks, glue, yarn.





Experiences:

- A. Construct the heddle of popsicle sticks with hole drilled in the center.
- B. Warp loom.
- C. Attach end to hook or door knob.
- D. Begin weaving.

References:

Backstrap Weaving, Barbara Taber, Watson-Guptill Pub., New York.

Opening the Door to Two Harness Techniques, Irene Franc, Van Nostrand, Reinhold Co., New York.

Simple Weaving, Grete Kronche, Van Nostrand, Reinhold Co., New York.

Films:

Weaving, Paramount Communications, 5451 Marathon Street, Hollywood, Calif. 90038.

Fiber Art, Churchill Films, 662 North Robertson Blvd., Los Angeles, Calif. 90069.

DECOUPAGE

Surfaces:

Wood, metal, glass, ceramic, hand plastic, trays, boxes, picture frames, screens, lampshades, bookends, china dishes, furniture, kitchen cabinets, sconces, wall plaques, lamp bases, pottery, stone.

Pictures:

Magazine, book, greeting card, wall paper, gift wrap, postcards, stationery - note cards, decals, stamps, calendars.

Materials and Basic Techniques:

A. Prepare the surface - it should be smooth and free from dust. Stain or glaze or antique.

B. Adhere the print - spread glue over the back. If necessary, add a drop or two of water to make the glue smooth.

C. Rub print on base - rub from the center toward the edges to remove wrinkles and air bubbles. A small brayer or roller can be used.

D. Seal the print - brush a coat of white glue thinned 1/4 with water over the surface of the print.

E. Distress the surface - This step is not necessary but gives an old and weathered look. Gouge or chisel away areas of wood or dig, scratch, or strike the surface.

F. Antique the surface - apply antiquing glaze with brush or cloth, wait five minutes, then wipe gently to remove antique from print, leaving most of it on the wood.

G. Finish the surface - brush decoupage finish on the article, making as few strokes as possible. Dry - at least an hour.

H. Final touch-up - rub surface with steel wool to remove glassy surface. Buff with a soft cloth.

BATIK

Easy Batik:

A. On white cotton cloth or muslin, sketch a design with black permanent marker; fill in with colored markers wherever you wish.

B. Place can with paraffin in a pan of water and melt.

C. Brush melted paraffin over all lines and colored areas, plus any other areas that are to remain white.

D. Dip cloth into a bright colored bath (dye) and let dry on newspapers.

E. When dry, iron cloth between newspapers until wax is removed.

Instant Crayon Batik:

A. Sketch a design on white cotton or muslin leaving spaces between shapes.

B. Melt crayons in a pan of water, adding a small amount of paraffin to each color of crayon.

C. Brush melted crayon into areas desired; check to be sure wax saturates cloth.

D. Dip cloth into a bright colored bath (dye) and let dry on newspapers.

E. When dry, iron cloth between newspapers until wax is removed.

WALL HANGING

TIE AND DYE

Dyes:

A. Always choose the dye appropriate for the fabric.
B. For deep dark colors the water must be simmering.
C. Cold water dyes work well with natural fabrics such as cotton, linen, wool, or silk; and for polyester cotton blends.
D. For best results use white on pastel fabrics.
E. Make sure fabric is perfectly clean. Wash new fabrics.
F. Drip-dry fabrics do not take dye well.
G. When using more than one color, always start with the lightest color and make sure the colors will blend well with each other.

Containers:

A. The containers for the dye should be large enough to allow the fabric to move around freely.
B. Use saucepan or metal (rust-free) bucket on the stove.
C. For cold dyes a plastic bowl, metal bucket, the kitchen sink, or bathtub may be used.

Patterns:

A. Marbling - is the easiest effect to achieve. Crumple the fabric into a ball or sausage shape and bind tightly at intervals with string. Wet thoroughly and dye. If using more than one color, rinse the fabric well, undo the string, crumple again and retie.
B. Knotting - can produce a variety of different patterns, from bands to unusual freeform flower shapes. Roll the fabric diagonally, knot tightly at intervals and dye. Rinse the fabric thoroughly, undo the knots and reknot below the original knots. Rinse, untie the knots, rinse again and wash the fabric. To produce a broken wavy pattern, fold the fabric three or four times lengthwise and tie into several regularly spaced knots before dyeing. Freeform designs can be created by knotting the fabric at random; areas of pattern can be planned by marking the position of each knot.
C. Clump tying - a very attractive pattern can be made by tying small stones into the fabric at intervals. Dye the fabric, then rinse it. Remove the string and stones and wash thoroughly.

D. Pleating - pleat or fold the fabric to produce colored stripes. Variations: (1) fold the fabric lengthwise for vertical stripes; (2) widthwise for horizontal stripes, and (3) diagonally for diagonal stripes. Every fold denotes a stripe, so for an evenly spaced design, measure the distance between each fold and tie the string bindings at regular intervals.

MOBILES

The success of a mobile depends on very careful balancing, so that the suspended objects move in the slightest breeze. Popular themes are birds, fish, boats, butterflies.

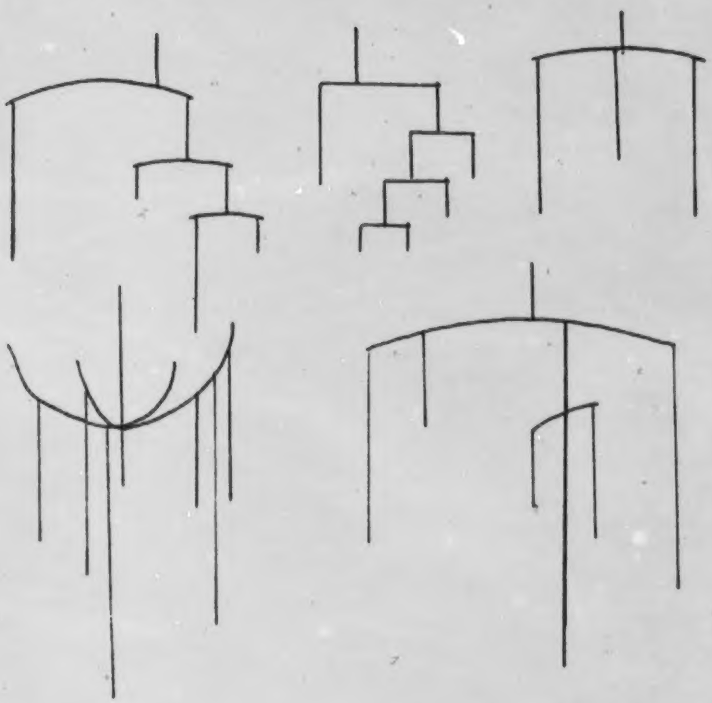
Materials:

Colored paper, foil, acetate, felt, pipe cleaners, straw, feathers, leaves, wood shavings, reeds, wood, metal, glass, plastic.

Supports:

Wire, doweling.

You may wish to make your mobile follow a theme for a holiday or a unit you are studying.



MOSAICS

Paper:

Rice paper, flourescent papers, magazines, wallpaper, metallic, colored cellophane, gift wrap, construction, paint sample color charts.

Linoleum:

Linoleum remnants, asphalt and rubber tile.

Seed:

Kidney beans, white beans, sunflower seeds, poppy seeds, yellow and green split peas, orange bird seed, mustard seeds, lentils, sesame seeds, corn, popcorn (colored like Indian corn), rice, lima beans, oats, barley, coffee, uncooked cereals.

Miscellaneous:

Eggshells, scraps of glass, wire, nails, screws, pebbles, shells, marbles, abalone shell, wood shavings, gravel, aquarium gravel, macaroni, spaghetti, tiny buttons, leather scraps.

Tile:

Mosaic tile, ceramic tile.

Backgrounds:

Poster board, plywood, or set tiles or pebbles in cement. The cement can be colored so that areas of the design have different colors showing through.

FLOWERCRAFT

Dried flowers:

Gather and harvest flowers, leaves, and grasses at the end of the growing season, then carefully dry and preserve them to retain their natural autumnal shades.

Glycerin and water method:

When using this method, the flowers are stronger and more pliable and tend to last longer. Mix one part glycerin and two parts water in a tall glass jar. Scrape and split the base of hard woody stems. Place plants in the solution so it reaches about 2" up the stems. Set in a dry place to prevent mildew. There will be a color change throughout the plant. If too much solution is absorbed, drops of excess glycerin will appear on the leaves - remove from the solution as this could damage furniture when the flowers are arranged.

Drying flowers by hanging:

Flowers dried in this way tend to be brittle and more fragile. Plants to choose for this method are: spiraea, golden rod, delphinium, yarrow, lavender and baby's breath; grasses and cereals of all kinds; and seedheads from poppies, cow parsley, allium, honesty, sorrel, globe thistle, hollyhocks, clematis, and acanthus. Cut the flowers and grasses on a dry day when the bloom is not fully open. Seedheads can be cut when they start to dry on the plant. Tie the stalks in loose bunches; hang them head down, in a dry airy space for about three weeks.

Preserving flowers by desiccation:

This results in perfectly preserved, well-colored specimens. Choose roses, daffodils, lilies, daisies, primroses and marigolds. Use sand, borax or silica gel. Place flower heads carefully on a bed of sand, borax or silica gel in a box or storage container. Make sure they do not touch each other. Cover completely with the same material, adding it gently so the petals will not be damaged. Close the boxes and place in a warm dry place for two to seven weeks.

Wiring dried flower heads and leaves:

Push the wire through the center of a dried flower head, turn a small hook over at the top and draw this back down into the flower center. Cover wire with florist or green tape. This allows a greater freedom of arrangement.

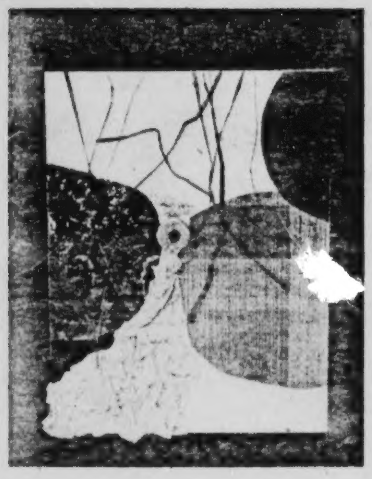
Pressed flowers:

Pick perfectly shaped flowers, leaves and grasses when in their prime. Flat plants like ferns, hydrangeas, pansies and primroses are ideal. Yellow and orange colored specimens retain their color best; blues - with the exception of delphiniums - tend to lose color; reds turn brown; delicate rose colors merge into cream.

COLLAGE

Materials:

Corrugated cardboard, construction paper, wallpaper, cellophane, metallic papers, burlap, canvas, yarn, wire, sandpaper, bottle caps, screen, newspaper, tissue paper, poster board, letters cut from magazines or newspapers, fabrics - all kinds and textures, cording and braids, cork, thin metal pieces, cotton, sponges, pebbles, sand, driftwood, shells, leaves, twigs, seeds, buttons, macaroni, glass, leather scraps, rickrack, lace.



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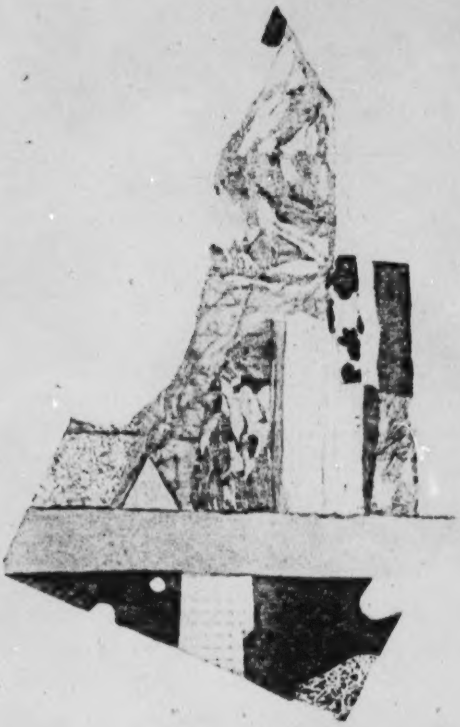


COLLAGE

Attach materials to background with Elmers glue, rubber cement, fabric adhesive, staples. Coat with polyurethane varnish, clear varnish, decoupage finish, or clear plastic spray.

Idea:

Place inside a frame and arrange in a three dimensional manner.

STITCHERY

Materials:

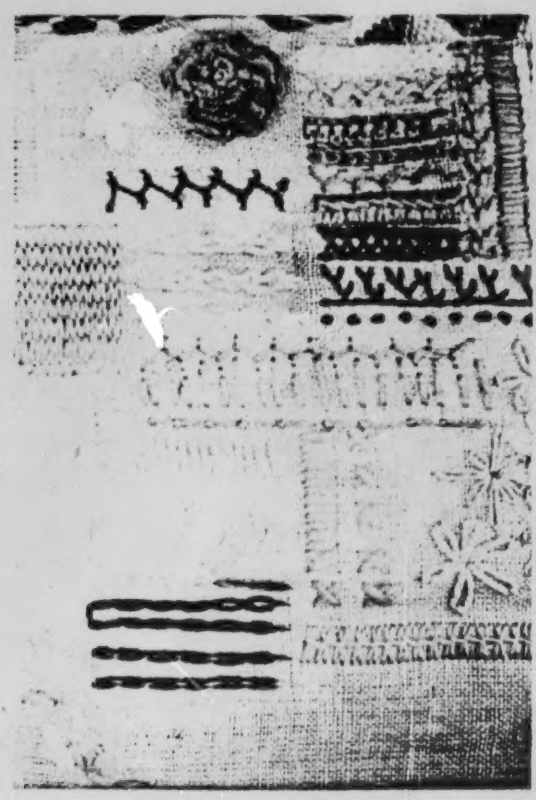
Yarn, cloth, remnants, string, feathers, ribbons, buttons, sequins, twine, seeds, raffia, beads, clothesline, fabric strips.

Base:

Burlap, linen, canvas, sail cloth, felt, homespun fabric.

Stitches to use:

Button hole, French knots, lazy daisy, chain, running stitch, blanket stitch, feather stitch, cross stitch.



STITCHERY

PAPIER MACHE

Suggested projects:

Animals, banks, bowls, puppet heads, masks, bells, candleholders, fruits and vegetables, vases, beads, Christmas ornaments.

Hints:

A. Pulp papier-mache is shaped by spreading over a mold. The mold may either be generously greased or covered with wax paper. Cover to 1/2 inch in thickness. Press the pulp firmly into all recesses. Allow to dry thoroughly before unmolding.

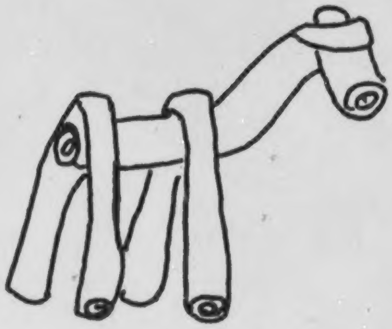
B. Strips or pulp may be used over an armature made of wire or rolled newspaper.

C. When you shape the papier-mache without a mold, make it thicker than 1/2 inch. It will take longer to dry so may mold (see recipe).

D. Sand the finished product with sandpaper and give it a base coat of white paint. Paint as desired. A high-glass or mat-finish varnish or a coat of liquid plastic finishes the project.

Idea:

Papier-mache Relief - draw a design on desired background. Build up the design with boxes, lids, paper tubes, and crushed paper. Try for a three-dimensional effect. Attach pieces with strips of paper spread with wheat paste. Cover entire area with four to five layers. Cover with paper toweling for the last layer. Let dry and paint.



VISUAL ART FOR THE HANDICAPPED

The many values of visual art experiences for normal children are equally valid for those with handicapping conditions. The emphasis for the handicapped student, however, should first be on the process value of the creative art experience as it contributes to the student's overall physical, intellectual, social, and emotional development.

Through practice, a handicapped child can develop mastery of tools, materials, and processes. He thus learns the joy and pleasure of skill development, and can feel pride in a product made completely by himself. He can give this product to others and at times contribute a sense of beauty to the world. This kind of productive-creative experience can help promote a positive self-image for the handicapped child, often the needed springboard for the development of life-coping skills in other areas.

It is now recommended that wherever possible, the handicapped student be "mainstreamed" into the general education class, including the visual arts courses. This will require a special understanding and effort on the teacher's part, and where possible, additional training; for the handicapped child may not be easy to work with. However, the rewards can be immense. It may require more energy to empathize, more imagination to find a way for the child to have independence and personal definition in and through art. It may require much patience and much time for the learning to show. But to help the handicapped student become himself is a rewarding experience, one that enriches the teacher as well.

A comprehensive orientation and/or preparation of the non-handicapped students should be implemented so that they are aware and sympathetic to the possible differences in pace and accomplishment of the handicapped student. The teacher should also be advised by the special education staff as to the nature of the handicapped student's impairment. It would also be highly advisable that a specially selected student or adult teacher aide's assistance be implemented when handicapped students are "mainstreamed" into the regular art class. It is possible that community artists willing to work with the handicapped could be found to serve as these aides.

It is important that the handicapped child have art, in spite of and because of his disabilities. These disabilities may make it harder for him to use art materials than the "normal" child. Yet his need for self-expression, for pleasure, for challenge, and for creating something which is uniquely his are great. So, in spite of his problems, the handicapped child deserves the most intensive, extensive, and creative art activities which can be provided. Every district in Idaho should provide such activities and should include works of art by the handicapped in all exhibits.

APPENDIX - (Part 1)

Helpful Hints

Many objects made from Plaster of Paris with ribbon or cord as a chain will cut through plaster.

To give a shine to finished plaster objects paint with clear nail polish.

Never throw plaster water down sink drain.

Turpentine will make a drawing of crayons transparent.

To determine amount of plaster needed for a mold, fill it with water and pour that amount of water into the mixing container and proceed as follows: Do not stir while adding plaster to water. This will cause the plaster to set too rapidly. Begin to add the dry plaster to the water. Sift it slowly in small amounts, making sure not to dump it into the water. Remember, you cannot add water to plaster. You must always add the plaster to the water. Continue adding plaster slowly until a mound is formed above the water in the center of the container. (For a 10" container the mound should rise above the water about 1 1/2" and should be about 5" in diameter. Allow the plaster to set and absorb the moisture fully. Do not mix. The mixture will not set unless it is agitated. Mix with a plaster blender or potato masher only until no water is visible, about one minute. Fill the mold, shake it gently to level the plaster, and insert the hanger.

Glitter sticks to candles with nail polish or glue. Use pins to put sequins and jewels on candles.

To color pieces of cotton or cotton balls, tear cotton into sizes and shapes to be used, put into a paper bag with a little colored dry tempera paint and shake.

If your metal tooling is deeply embossed, fill in the back with modeling clay, Sculptamold, or a mixture of sawdust and white glue.

Copper tooling will retain its natural finish by spraying with lacquer, or may be antiqued by using a liver-of-sulphur solution, or it may obtain an opalescent quality when held over an open flame.

To clean an aluminum project, use lacquer thinner, alcohol, or vinegar. To antique it, spray with a coat of fast-drying black paint for metal. Wipe off raised areas with a cloth that has been dipped in the solvent recommended for your paint.

If you need to compute the length of cords for a macrame project, decide on the length you want the project to be when finished; multiply this figure by 3 1/4 or 4, then multiply by 2, as each cord will need to be doubled. To compute a holding cord, add 6" to the width you desire the finished article to be.

Popular materials for macrame are: cotton, seine twine, sisal, hemp, and pulley cord. Remember thick cord usually takes up more length than thin cord.

To prevent powder paints from rubbing off, spray with clear plastic, or cover with a thin coat or two of clear varnish or lacquer. If these are not available, substitute a spray solution made from evaporated or powdered milk (using the directions given on the milk-container labels for mixing with water.)

A water soluble printing ink can be made by mixing powder paint with glycerine.

An oil-base printing ink can be made by mixing powder paint with clear varnish. Mix on a piece of waxed paper or a piece of glass by rolling the mixture with a brayer until it is smooth and tacky. (The cleaner for varnish is paint thinner or turpentine.)

A water-soluble screen-printing ink can be made by mixing powder paints with a thick soap solution.

A glossy enamel-like paint can be made of powder paint mixed with white shellac. (The cleaner for shellac is alcohol.)

Weaving Hints

Make sure the warp stays absolutely vertical and evenly spaced as you work so the side edges don't buckle in or out.

The thicker the weft, the wider the space should be between warps.

Coordinate colors and textures before weaving. Three to five colors are plenty to start with. A limited color scheme allows repetition which makes a more unified design.

For variety, combine yarns with shells, reeds, pods, dried weeds, flowers, pieces of driftwood, and beads.

Hints for Woodcraft

Hardwood - oak, maple, birch, mahogany, teak, and ebony.

Softwood - redwood, pine, fir, and spruce.

Remember that because of the milling process, the actual size of lumber is slightly less than what was requested.

Before sawing, draw a line on the best side of the wood, designating length to be cut.

When cutting plywood, draw cutting lines on both sides of wood and score with a sharp chisel before sawing. This helps prevent splintering. Use a fine-toothed saw for cutting.

When sanding wood, always sand with the grain of the wood. Sanding across the grain will tear the wood fibers. If using more than one grade of sandpaper for the same surface, sand with the coarser grade first and then with the finer grade. Apply an even amount of pressure over the entire surface. You can wrap sandpaper around a block of wood or use a sanding block to ensure even pressure.

APPENDIX - (Part 2)

Recipes

Modeling Salt Mixture

Mix: 1 cup salt, 1/2 cup boiling water, 1/2 cup cornstarch, and a sprinkle of powdered paint.

Put in a pan and cook until thick. Keep in a plastic bag until used.

Modeling Goop

Heat together 2 cups salt and 2/3 cup water for 3-4 minutes.

Add 1 cup cornstarch mixed with 1/2 cup cold water.

Stir quickly to mix into a stiff dough. If the mixture is not thick enough, place over low heat and stir about 1 minute until ready. Food coloring may be added. This goop can be kept indefinitely if kept in plastic or foil. No refrigeration necessary. Makes 1 and 3/4 pound.

Plaster of Paris

Fill mixing container half full with water. Slowly sprinkle the plaster of Paris into the water - do not stir. When the surface is covered with thin film of dry plaster, wait several minutes, then slowly stir the mixture. If it sets too quickly, add 1 tablespoon vinegar to each pint of water. Measure water by filling the mold you are using with water - this will provide enough mixture. When the block has set and is carved, it may be painted with tempera. To create a different texture, add vermiculite to plaster.

Sawdust Modeling Dough

Beat together until smooth: 1 cup dry wallpaper paste and
2 cups water
Add: 4 cups sawdust

Work the mixture together with your hands; then wrap in plastic bag overnight. Keep wetting hands while modeling. Keep it in one big shape as two shapes will not stick together. Dry several days. Paint with tempera paint.

Flour and Salt

1 part flour

1 part salt

Add water and mix until manageable. Good for relief maps, dioramas, beads. Paint with tempera when thoroughly dry, or precolor clay with food coloring.

Simple Mix for Carving

3 parts plaster of Paris

5 parts Zonolite

1 part sand

1/2 part wheat paste

A hard mix may be obtained by substituting concrete for plaster of Paris and Vermiculite for Zonolite.

Great Modeling Stuff

Simmer together for 2 minutes, stirring constantly: 1 cup salt, 1/2 cup water.

Stir together and add to salt mixture: 1/2 cup cornstarch, 1/4 cup cold water.

Mix together as hard as you can. When mixture is cool, mix thoroughly with your hands. Keep your hands wet while modeling. This mixture can be rolled between two layers of wax paper and cut with knife or cookie cutters into desired shapes. Let dry several days. Poke holes into large objects to speed drying. Paint with tempera. Cover with shellac or clear nail polish.

Modeling Formula for Beads

To make paper beads, dissolve 1 heaping teaspoon cornstarch in a small amount of water. Add 1 cup boiling water and 1/4 cup salt. Boil until clear. Add 1 cup shredded newspaper and stir. Boil about 10 minutes longer. Remove from heat and let the material cool. Mold into beads. Holes for thread are made with a needle. Allow to dry and string. Beads may be painted with tempera and covered with shellac before stringing if desired.

Relief Map Clay

Use 1 pint sawdust, 1 pint plaster of Paris, and 1/3 pint soluble paste. Thin the paste with water, add plaster of Paris, then sawdust. Knead to a doughy consistency. It will harden in about 20 minutes. If more time is needed before hardening, add 1 tablespoon vinegar.

Gesso

This fine modeling material is used to decorate small objects such as bookends and jewel boxes. Old picture frames were usually decorated with simulated carvings of gesso.

Mixture 1: 1 tablespoon gum arabic
1 teaspoon ambroid cement (Duco)
Mix with as much plaster of Paris as can be absorbed.

Mixture 2: Add plaster of Paris to shellac until creamy.

A brilliant white gesso, thick and creamy, can be made by using white poster paint and white glue mixed half and half. It is water-proof and inexpensive.

Salt Paint

Mix 2 teaspoons salt
1 teaspoon liquid starch
1 teaspoon water
A few drops tempera

This paint gives a shiny, grainy surface.

Papier-mache

Papier-mache is a French word meaning mashed or pulped paper. It is made by adding paste to mashed paper and dried in the desired shape. It is a very light and extremely durable material. Pails, boxes, and even furniture have been made from papier-mache. It costs almost nothing and can easily be made and used by the youngest children. Its biggest disadvantage is that is shrinks considerably in drying.

Mixture 1: Tear newspaper into narrow strips.
Soak for several days in water.
Mash into smallest pieces possible.

Drain water and add wheat paste or flour to produce the consistency of soft modeling clay. Add one teaspoon of boric acid to each pint of water used for soaking to prevent mildew. A drop or two of oil of cloves or wintergreen may be added as a preservative.

Mixture 2: Mix together into a thick paste: 1 part clay powder, 1 part calcimine, and 2 parts water. Knead into this mixture torn pieces of toilet tissue.

Mixture 3: Tear newspaper into long strips. Dip strips in wheat paste, flour paste or library paste and place strips on prepared form making a thickness of several layers.

Mixture 4: Paint a coating of wallpaper paste over a sheet of newspaper. Lay a sheet of newspaper on top of this and press it down firmly. Paint this with a coat of paste and repeat until six or eight layers have been applied. When this becomes leathery hard, it may be cut and molded into the desired form and allowed to harden.

APPENDIX - (Part 3)

Facility Requirements for Visual Art Education -- Secondary

Rationale:

Facilities for visual arts may be varied as the individual differences between schools, teachers and curriculas. A program of basic art experiences (fundamentals) may be carried out in a small room with minimal furniture and equipment if the facilities do not restrict the creative activities. Areas may be broadened as interest, budget, and emphasis enlarges to encompass a more comprehensive variety of media and projects within the visual arts program.

A functional art room should include:

Teacher Work Area - Teacher's desk, demonstration desk, chalk board, display boards, projector and projector stand (portable).

Student Work Area- All-purpose tables, seating (chairs, benches, stools), work bench, work counters (with adjustable shelving underneath), sink (with two to three side access and large cleanup trap underneath), lighting and electrical fixtures (outlets for appliances and power tools 110 V and 220 V for ceramic kilns), darkroom with sinks for the photography students.

Storage - Students lockers, horizontal compartments for paper storage, cabinet shelves for three dimensional objects, vertical compartments for drawing boards and wet paintings, locked storage for raw materials and supplies-teacher control and security, wardrobe for both teacher and student protective clothing, smocks and aprons.

A recommended minimum of 1440 square feet to house the above areas is considered basic for a class load of 24 students.

Alternatives:

After surveying the number of class periods each classroom is occupied during the school day, combining use of a laboratory type of classroom may be possible. Obsolete buildings away from the main school complex, and not in use, might be reconditioned for this purpose. Industrial arts and home economics laboratories might be utilized as a visual arts lab if limited enrollment permits. This later combination often enhances the elective program for students if it is kept a coeducational offering. Nearby off-campus building utilization is another possibility if power and water utilities are available. Shifting classroom occupancy to maximum school day periods may free part-time areas for conversion to a visual art laboratory.

Refurbishing obsolete and/or unused cafeteria furniture, athletic benches, industrial art workbenches may be a short term means of equipping a visual arts lab. Storage modules with adjustable shelving and work space counter tops which are constructed from plywood may be less costly than built-ins, and lend flexibility in placement in classroom conversions. Taller storage moduls that have doors may be utilized for chalk boards and display panels. Electrical and water service cannot ordinarily be substituted. In certain circumstances, larger custodial rooms might be utilized to house kilns, darkrooms for photography, and sources of water.

Basic Art Equipment -- Secondary

Rationale:

Basic equipment for visual art activities will vary the same as facilities do in relation to individual schools, teachers and curricula. The amount and quality of basic equipment will be dependent upon school budget, facility accomodations and the scope and sequence of the program. It is recommended the program include both two and three dimensional experiences which would require the following equipment:

Ceramics and Sculpturing - Clay storage bins, potters wheels, kiln, drying rack, modeling stands, spray booth, spray equipment, damp box, and hand tools.

Jewelry - Copper Enameling Kiln, polishing wheel, electric jigsaw, hand-tools, casting equipment for lost wax casting.

Printing - Moveable bed press, copy press, clothes wringer, silk screen frames, hand tools.

Drawing and Painting - Drawing boards, easels, model stands, stools, hand tools.

Alternatives:

Due to budgetary and facility limitations, a suggested alternative list would be:

Ceramics and Sculpturing - Plastic garbage bags in galvanized cans on dollies for moist clay storage, homemade kick wheels in place of electric potters wheels (use of slab, coil and slip casting methods as well); gas and other combustible fired kilns in place of electric kilns. Drying racks, modeling stands, and spray booths may be substituted with refurbished cupboards-cabinets no longer in use, or cardboard constructions from large cartons. An old refrigerator makes a good damp box, dipping - pouring and brushing on. Heavy duty hand insect sprayers may sub for regular spraying equipment. Modeling stands may be made from automotive wheels and axel housings.

Jewelry - Hot plates and/or propane torches with racks may be used in place of a enameling kiln. Scavenged motors from old electric washers and dryers with adapter arbors may inexpensively substitute for polishing wheels. Sabre saws or hand coping saws with metal cutting blades may be used in place of an electric jigsaw.

Printing - Rolling pins, brayers, spoons as well as hand operated clothes wringers may be used in place of presses. Nylon stockings, organdy stretched over homemade wood or cardboard frames may be substituted for basic experiences in silk screen.

Drawing and Painting - Half inch to three quarter inch thickness plywood, or laminated cardboard panels may work in place of drawing boards temporarily. Hinged plywood or cardboard may be used for table easels (especially where work space is limited). Tree stumps, nail kegs, and thirty gallon oil drums will work for model stands. Folding chairs are a poor substitute for stools since they are usually too short for the work tables and are more expensive than stools in cost. "Mill stools" might be constructed from scrap lumber, or drawing and painting "horses" to satisfy temporarily the easel and stool requirements.

Photography - With cooperation of a local commercial enterprise, independent study for students (evenings, weekends) might be a temporary measure to be investigated.

APPENDIX - (Part 5)

NOTE: An effort was made to solicit and utilize student works of art for illustrating techniques and concepts. Sincere appreciation is expressed to all Idaho students who submitted works for this purpose.

Student Illustrations

Cover Design	Lori Thomas, Coeur d'Alene High School, Grade 11 Coeur d'Alene, Idaho 83814
Form	Jenifer Mouritson, Emmett High School, Grade 11 Emmett, Idaho 83617
Ceramic Art-Slab Pot	Bob Cox, Canfield Junior High, Grade 9 15th and Dalton, Coeur d'Alene, Idaho 83814
Value	Jeff Madison, Jefferson Junior High Caldwell, Idaho 83605
Wood Block	Ron Johnson, Moscow Junior High, Grade 9 Moscow, Idaho 83843
Non Objective and Shape	Vicki Cline, South Junior High, Grade 9 Nampa, Idaho 83651
Balance Experience Illustration (Cartoons)	Tina Schroeder, Emmett High School, Grade 11 Emmett, Idaho 83617
Formal Balance	Tim Matheson, Jefferson Junior High Caldwell, Idaho 83605
Informal Balance	Jeannie Allphin, West Minico Junior High, Grade 9 Paul, Idaho 83347
Animal Drawing	Melanie Reid, Pocatello High School Pocatello, Idaho 83201
Pen and Ink Drawing	Ken Conger, Coeur d'Alene High School, Grade 11 Coeur d'Alene, Idaho 83814
Charcoal Drawing	Debbie Flowers, Emmett High School, Grade 12 Emmett, Idaho 83617
Batik	Stewart Heinzmann, McCall-Donnelly Junior High Grade 8, Donnelly, Idaho 83615
Texture	Julia Graviet, Emmett High School, Grade 11 Emmett, Idaho 83617
Contrast	George Quintana, Jefferson Junior High Caldwell, Idaho 83605
Contour Drawing	Kent Walker, Jefferson Junior High Caldwell, Idaho 83605
Art Metal - Copper Tooling	Tracy Squire, Emmett High School, Grade 12 Emmett, Idaho 83617

Still Life Drawing	Julie Minium, Emmett High School, Grade 12 Emmett, Idaho 83617
Portrait Drawing	Tammy Hanna, Coeur d'Alene High School Coeur d'Alene, Idaho 83814
	Renee McKinley, Jefferson Junior High Caldwell, Idaho 83605
Print	Angela Thomas, Monroe School, Grade 5 Boise, Idaho 83705

APPENDIX - (Part 6)

Sources of Supply

It is strongly recommended that reference be made to current periodicals as listed in the bibliography to obtain sources of supply, catalogues and other reference materials.

Local, state, and regional art supply sources also exist in many Idaho cities. Some of these sources provide demonstrations in the use of their materials in the visual arts field, and teachers are urged to become aware of these offerings.

APPENDIX - (Part 7)

GLOSSARY OF VISUAL ART TERMS

ABSTRACT	A type of art derived from realism but stripped of most or all details, leaving only basic essentials by the use of lines, shapes, colors, and textures. It also may include art executed without reference to actual objects.
AESTHETICS	Having to do with theories of perception, that is sensory response; including psychology, philosophy and sociology of art; concerned with relationship of art to other phases of culture.
AIR BRUSH	A small, more delicate version of the familiar spray gun. It is used with dyes and watercolors in commercial illustration.
ANATOMY	For artists, anatomy consists of the study of bone and muscle structure in relation to the human figure in action or at rest.
APPRECIATION	To become visually discriminating about what one sees and what one does.
ACQUATINT	An etching process to achieve tone.
ARMATURE	A metal framework or skeleton used in modeling as a support for the clay.
ARRANGEMENT	The composition, design or order imposed by the artist on his material.
ASSEMBLAGE	The extension of collage into an acceptable sculpturable form.
BALANCE	One of the principles of visual art, equilibrium established by harmonious arrangement. The kinds are formal, or symmetrical and informal or asymmetrical and visual.
BAS-RELIEF	A sculpture whose design is raised only slightly from the background surface. Also called low relief.
BATIK	A wax resist method of dyeing cloth.
BEATER	Used to push the weft against the warp. Fingers, a large toothed comb or a fork can be used.
BINDER	Any material which binds pigment in a continuous film, for example, oils, resins, and especially glue, gum and casein.

BISQUE	The name applied to unglazed pottery after being fired once. Also called Biscuit Ware.
BLOCK PRINT	A print derived from an engraved surface, generally wood or linoleum.
BRAYER	A small roller, usually of rubber, for inking blocks, types, or plates by hand.
BROKEN COLOR	A painting technique of short, thick strokes laid over a ground color to create vibrant textures and rich effects of light (impressionism).
CALLIGRAPHY	Fine printing or writing done by hand.
CARICATURE	A descriptive picture marked by ridiculous exaggeration or distortion.
CASTING	A basic method of shaping metals into statuesque reliefs or other three dimensional works of art.
CERAMICS	The term used for the art of molding, modeling and baking objects in clay.
CHROMA	The intensity of a color-its brightness or dullness.
CLOISONNE ENAMEL	A process of enameling in which strips of metal are soldered to a base, forming cells into which enamel is poured and fused.
COHESION	The bringing together of all art elements and principles; synonymous with harmony and unity as an end product.
COLLAGE	A composition made by an arrangement of various materials pasted or fastened to a flat surface. Sometimes used interchangeably with montage.
COLOR	A sensation produced by the eye by the amount and kind of reflected light. Primary Colors - The basic colors (red, yellow, blue) from which all other pigment colors are mixed. Secondary Colors - The six colors which are produced when two adjacent primary colors are mixed together. Complimentary Colors - Colors which are opposite each other on the color wheel; when mixed together in equal portions produce a neutral color. Analogous Colors - A number of colors found adjacent to each other on the color wheel.
COMMERCIAL ART	All art produced as a matter of trade is termed commercial art, but the term is generally restricted to art used as an aid to business, such as posters, advertisements, book jackets, magazine illustrations.

COMPOSITION	The art of combining the parts of a work to produce a harmonious whole. The way in which areas of a drawing or painting relate to each other.
CONTOUR	The visible border of a mass in space. A line which by its subtlety creates the illusion of mass and volume in space.
CONTOUR DRAWING	A technique used to create in drawing shapes usually using a continuous line which sometimes shows arrested motion.
CONTRAST	The opposition or unlikeness of things compared; an aspect of variety.
COOL COLORS	Those colors suggesting a sense of coolness such as green, blue, and violet.
DECOUPAGE	French word meaning to cut out. Today means to tear out and to paste.
DELINEATION	Drawing of an object by means of lines instead of masses.
DESIGN	The arrangement of component parts which make up a composition or other work of art. Also, the preliminary plan for same.
DISTORTION	Deliberate departure from the normal appearance of an object or person for a specific aesthetic purpose.
DRAWING	The act of creating a picture by means of an arrangement of lines and values made with a marking instrument such as a pencil, crayon, charcoal, pen or brush. Also a name given to the picture so created.
EARTH COLORS	Pigments like umber, terre verte, ochre and venetian red which owe their hue to natural metallic oxides.
EARTHENWARE	Clay body in which the finished product is still porous, does not vitrify and is low fired.
EMBOSS	To ornament a surface with raised work.
EMPHASIS	That portion or aspect of a design or picture in which the most intense expression is found. Emphasis implies both dominance and subordination.
ENAMEL	Prefired glass which is ground to a powder, applied to metal surfaces, and refired and fused to the surface by exposure to extreme heat in kiln.
ENCAUSTIC	Painting with a hot wax medium.
FIXITIVE	An alcohol-thinned shellac or plastic spray which is applied to charcoal, chalk or pastel drawings to prevent rubbing off.

FLUX	Usually borax. It prevents oxide forming on metal and allows solder to flow. It is also used as an agent in the melting of metals.
FORM	One of the elements of design (apart from color, line, shape and texture) which is involved with solid masses and shapes, or their representation and has the quality of being three dimensional.
FREE FORM	Form and shape which do not conform to specifically defined contours, amoeboid in nature, nongeometric, and generally non-representational.
FRESCO	The art or method of painting on freshly spread plaster.
FRIEZE	A continuous pattern; a scene which repeats; generally used as an ornamental band or trimming. May be painted or sculptured.
GENRE	Painting in which scenes and objects of everyday life are represented realistically.
GESSO	A material applied to prime or build up a surface for painting.
GESTURE DRAWING	A freely and quickly sketched drawing expressing deliberate motion.
GLAZES AND GLAZING	Thin films of translucent color applied to an already dried underpainting executed either in oils or tempera. Also a glasslike finish applied to pottery.
GRAPHIC ART	A general term applied to drawings and prints.
GREENWARE	Unfired pottery.
GOUACHE	Water colors made opaque by the addition of white.
GROG	Ceramic material which has been fired and ground into fine fragments. Grog may be mixed with moist clay to give added stability and to lessen shrinkage during firing.
GROUT	A fine plasterlike cement used to fill in the spaces between the tessera in mosaics.
HARMONY	That which is given to a design by keeping a feeling of kinship between the elements. Kinship does not mean absolute likeness.
HORIZON LINE	A generally horizontal line in a picture where earth and sky meet.

HUE	That property by means of which one identifies a color by name and distinguishes it from other colors. For example, red, yellow, and blue are three different hues.
ILLUMINATION	The decorations of manuscripts with ornamental initials, patterns, and illustrations which were developed in monasteries.
INTAGLIO	Forms hollowed or sunk into the surface instead of being raised upon it.
INTENSITY	In color, the brightness or dullness, also known as chroma.
KEY	The pitch of tone and color in a painting which is determined by the amount of white in the general distribution of color and light. Pictures painted in bright, light colors are said to be painted in a high key. Those painted in dark tones are in a low key because the general effect is nearer to black.
KILN	A well insulated gas or electric oven in which clay is fired or hardened by means of intense heat.
LINE	A continuous mark, longer in length than in breadth, made by a marking instrument, forming an element of a design as opposed to shading or color.
LITHOGRAPHY	A planographic or surface printing process based upon the mutual incompatibility of grease and water.
LOCAL COLOR	The color of objects as distinguished one from another, as when we speak of red bricks and yellow flowers without regard for the effect of light, atmosphere, and distance upon them or the colors of nearby objects.
LOOM	The frame on which fabric is made.
LUMINOSITY	A quality imparted to painting by using transparent pigments over light grounds which reflect light through the colors and thus give an effect of brillance.
MANIKIN	A small jointed figure in proportion to the normal sized human figures.
MASS	Large areas of forms as opposed to lines.
MAT	The surrounding area between the picture and the frame.
MATBOARD	Heavy cardboard, heavy paper or gypsum (wallboard) used for mounting pictures or specimens.

MEDIUM	The paint, clay, pencils, chalks or other materials by means of which the artist expresses his creative ideas in visual form. (Plural: media.)
MOBILES	Suspended and balanced sculptural forms with moving parts.
MODELING	Sculpturing with a soft plastic material such as clay.
MONOCHROME	Painting or printing in tones of one color only.
MONTAGE	A picture composed of many heterogeneous pieces of other pictures, printed matter or textures. The pieces are glued to a background in overlapping fashion to create a newly unified design.
MOSAIC	A picture composed of many small separate bits of clay, glass, marble, paper, which are cemented to a background.
MOTIF	A segment, a theme.
MOVEMENT	A principle of arrangement in which careful placement of the elements and use of the principles of arrangement causes the eye to travel in a certain direction within the composition.
NEEDLE	Weaving needle which should have large eye and a blunt tip.
NEUTRAL COLORS	Nonassertive colors, without positive values, characterized by lack of hue and intensity.
NON-OBJECTIVE	Paintings or sculpture which are expressions in pure design forms showing no representation of natural objects.
OPAQUE	Heavy or non-transparent.
PAINTING	Creating a work of art with the use of paint in various forms.
PALLETTE	A surface for mixing paint.
PALLETTE KNIFE	A flexible steelblade, used for mixing or applying pigments.
PASTELS	Highly refined and ground pigments pressed into chalklike sticks for drawing.
PERCEPTION	A direct awareness of surroundings through the senses.
PERSPECTIVE	A mechanical device for the projection of objects in three dimensions upon a flat, two dimensional surface used by artists as an aid to creating an illusion of depth and recession from the picture plane.

PICTURE PLANE	Proportions of the picture plane: more than 1/3 and less than 1/2 in any part.
PIGMENT	The term applied to any type of coloring matter, animal, vegetable, or mineral, which imparts color to paints, inks, chalks, crayons.
PLANE	A flat continuous surface which does not change direction.
PLATICINE	A non-hardening oil base clay.
PLASTICITY	That quality of a material that makes is suitable for modeling.
PRIMARY COLORS	In pigment these are red, yellow and blue.
PRINT	A proof or impression taken on paper or other material from a plate or block upon which a design has been incised or built up.
PROGRESSION	Movement produced by a continued and connected series of colors, shapes or forms.
PROPORTION	The relationship of one part to another or to the whole.
PROOF	An impression taken on paper from a wood block, engraved or etched copper plate, or lithographic stone or plate.
RHYTHM	An element of design that establishes a dynamic relationship and interdependence of parts of the artistic whole through regular recurrence of elements of motion.
SECONDARY COLORS	The colors that result from mixing equal parts of two primary colors: orange, green and violet.
SGAFFITO	The process of incising through a layer of color to reveal another color beneath.
SHADE	A deepened tone of a color achieved by the addition of black or its complement.
SHAPE	A shape is born when a line meets itself. It can be geometric or free form in dimension and is defined by line, color, texture.
SILKSCREEN	A printing process in which paint is forced through a mesh screen partially blocked out by means of stencil, film, glue or other media. Also known as serigraphy.
SLIP	Clay reduced to liquid batter for use in decorating or luting the other parts of a ceramic vessel or sculpture; similar to engrobe.

STABILES	Constructed, sculptural forms with no moving parts as opposed to mobiles.
STIPPLING	To paint, engrave, or draw by means of dots or small dents.
STITCHERY	Decorating or designing with threads, cloth and other materials.
STONEWARE	A kind of pottery of the nature of porcelain but with a coarser base.
STYLE	That which gives a distinctive or unique quality to art; the portrayal of an idea in a personal way.
STYLIZED	Worked out in a definite convention.
SYMMETRIC	Containing a balance derived from the placement of equal or similar weights, colors, forms, and lines on opposite sides of a certain line.
TACTILE	Pertaining to the sense of touch.
TECHNIQUE	Process by means of which an artist uses his media to express creative concepts.
TESSERAE	The small cubes of marble, stone, glass and so forth used in mosaics.
TEXTURE	The illustration of roughness or smoothness of a surface or the illusion of roughness or smoothness through pattern.
THRUST	Similar technique to contour drawing except putting more emphasis on the action of the subject.
TINT	A tone of color resulting from the addition of white to a basic hue. A pale or lighter value.
TONE	The general effect produced by the combination of light and dark.
TORSO	The human figure with or without the head, with the limbs cut off below the shoulders and at the top of the thighs. More frequently a statue of this kind.
UNITY	That which refers to the tasteful and meaningful use of the principles of arrangement as they relate to one another.
VALUE	The lightness or darkness of a color.
VANISHING POINT	In perspective, an imaginary dot on the horizon at which two or more parallel lines would appear to converge.

VEHICLE	The material which holds the powdered pigments together, that is, the binding medium; also the material employed by the artist as a dilutent or thinner. The term is never used to describe a painting technique as the word medium often is.
VITRIFICATION	The fusing of the clay particles during the firing process.
WARM COLORS	Colors which evoke a warm psychological response, especially the reds, oranges and yellows, and the other colors obtained by the mixing of these.
WARP	The vertical threads that support the fabric. Cotton and linen are the best.
WEFT	The yarn, thread or other material used to weave across the warp.
WEB	The woven cloth.
WOODCUT	A block of wood upon which a design or picture is engraved, with the use of gouges and knives; also the print made from the block.

APPENDIX - (Part 8)

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J. PHOTOGRAPHY

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II. PERIODICALS

ART IN AMERICA	Art in America, Inc. 850 Third Avenue New York, N.Y. 10022
ART NEWS	Art News Associates P. O. Box 969 Farmingdale, N.Y. 11737
ARTS AND ACTIVITIES	Arts and Activities 8150 North Central Park Ave. Skokie, Illinois 60076
ARTS CANADA	The Society for Art Publications 3 Church Street Toronto, M5E 1M2 Ontario
CERAMICS MONTHLY	Professional Publications, Inc. 1609 Northwest Boulevard Columbus, Ohio 43212
CRAFT HORIZONS	American Crafts Council 44 West 53rd Street New York, N.Y. 10019
CRAFTS AND THINGS	Crafts-n-Things Publishing Co. 2225 East Randoll Mill Road Arlington, Texas 76010
CREATIVE CRAFTS	Carstens Publications, Inc. P. O. Drawer 700 Newton, New Jersey 07860
DECORATING AND CRAFT IDEAS	Tandy Corporation P. O. Box 9737 Fort Worth, Texas 76107
JEWELRY MAKING--GEMS AND MINERALS	Gemac Corporation 1797 Capri Avenue Mentone, California 92359
SCHOOL ARTS	Davis Publications, Inc. 50 Portland Street Worchester, Massachusetts 01608

III. ARTS FOR MENTALLY RETARDED AND HANDICAPPED

Alkema, Cheter J. Art for the Exceptional. Boulder, Colorado: Pruett Publishing Company, 1971.

Baumgartner, Bernice B. and Joyce B. Shultz. Reaching the Retarded Through Art. Johnstown, PA: Mafex Associates, Inc., 1969. ED-ED035130.
Included in the manual on art are suggestions concerning growth through a good classroom climate, orderly arrangements, displays and a good visual experience; a view of development through art, concept differentiation, motor and sensory skills, self-fulfillment and thought processes and art as therapy; and the art program itself.

Blessing, Kenneth R. A Potpourri of Ideas for Teachers of the Mentally Retarded. Vol. I, Arts and Crafts. Madison, WI: Wisconsin State Department of Public Instruction, May, 1966. ED-ED011157.
This curriculum guide suggests that the objective of arts and crafts activities for educable mentally retarded children is to provide enjoyable activities as well as to teach skills, socially acceptable attitudes and habits and self esteem. More than 85 arts and crafts ideas, complete with how-to-make directions and illustrations, comprise most of the booklet.

Buffalo Public Schools, NY. Art Projects and Activities for the Mentally Retarded. 1969. ED-ED039666.
Forty-two art activities are suggested for use with mentally handicapped children.

Child, Toni (ED). Arts and Crafts for Use with Mentally Retarded Students. Columbia, SC: South Carolina State Department of Education, 1966. ED-ED051193.
The guide is divided into sections according to the material to be used. Section headings are: paper, fabrics, wood, metal, nature, miscellaneous and painting.

Dymond, Gerald E. and Others. A Curriculum for the Residential Trainable Child. Eighth Edition. Madison, WI: Wisconsin State Department of Health and Social Services, February, 1970. ED-ED038821.
The trainable child's needs and abilities are considered. Appendices treat concurrent work experiences, industrial therapy, music, art, speech and hearing and field trips.

Egg, Maria. Educating the Child Who is Different. New York: John Day Co., 1968.
Part I: relationship of the teacher to the retarded child and his family;
Part II: deals with how to educate retarded children. Specific chapters deal with play, music and rhythm, drawing and painting and the manual arts.

Freasier, Aileen W. Print Art: Sequential Task Programming for the Trainable Mentally Retarded. October, 1971. ED-ED048866.

Fukurai, Shiro. How Can I Make What I Cannot See? Van Nostrand Reinhold Co., NY, 1974.

Ginglend, David R. The Expressive Arts for the Mentally Retarded. Arlington, TX: National Association for Retarded Children. 1961. Purpose: to stimulate thinking about the role of expressive arts in educating and training the mentally retarded and in broadening their interests and activities during leisure time. Areas include art, arts and crafts, communication and language, dance, dramatics and music.

Harrison Educational Research and Development Center. End of Project Period Evaluation Report ESEA, Title III. Little Rock, AK: Arkansas State Department of Education, January, 1974. ED-ED081132. Evaluated is a two-year project in Harrison School District 1, Arkansas, to develop academic and music based instructional materials in two resource rooms for learning disabled (LD), educationally disadvantaged and mentally retarded children; and to integrate art and music with social studies in grades 1 through 6.

Hollander, H. Cornelia. Creative Opportunities for the Retarded Child at Home and in School. Garden City, NY: Doubleday and Company, 1971. Six booklets - Getting Started, Finger Painting and Print Making, Drawing and Painting, Clay and Other Dimensional Media, Stitchery, and Woodworking and Odds and Ends - were written for parents, teachers, volunteers, nurses and vocational workers. Specific areas include: finger painting, pulling a print, butterfly prints, gadget printing, vegetable printing, linoleum block prints, scribbling, crayon processes, felt-tip markers, colored chalk drawings, melted crayon drawings, ink drawings, painting, cut-tear-paste pictures, puppets, paper mache, collage, mosaic, wire sculpture, seed pictures, tongue depressor projects, and holiday decorations.

Iowa State Department of Public Instruction. Art Integration: A Teaching Program for the Mentally Retarded. Iowa City: Iowa University, August, 1969. ED-ED033498. To aid the teacher of the mentally retarded in integrating art into other subject areas, two sample projects and two five-lesson units with core activities. Directions are given for the use of the media of clay, fingerpaint, watercolor, tempera, crayon, paper, and other materials. Craft projects and ideas for core area activities are proposed.

McNeice, William C. and Kenneth R. Benson. Crafts for the Retarded: Through Their Hands They Shall Learn. Bloomington, IL: McKnight and McKnight Publishing Company, 1964. Practical, sequential and creative arts and crafts projects for the retarded. Projects are coded to indicate the use of small or large muscles, the degree of difficulty and the required time for completion.

Mills, Esther and Others. A Comparison of Especially Designed Art Activities with Traditional Art Activities as Used with Intellectually Handicapped Children and Youth. Arlington County Public Schools, VA: Maryland University, 1961. ED-ED002900.

Pattemore, Arnel W. Art and Crafts for Slow Learners. Instructor Handbook Series. Dansville, NY: Instructor Publications, Inc., 1969. ED-ED031845.
This booklet describes successful projects which have been used in special education art classes and to assist teachers in planning a worthwhile program.

Pinellas County District School Board. Curriculum Guide Functional Level B Exceptional Child Program Clearwater, FL: January 1973. ED-ED075976.
Sequenced instructional objectives in subjects are listed for students having a chronological age of 8 to 10 years and a mental age of 4 tO 8 years. Among these are art and music having students produce by form and construction a recognizable object (art) and having students describe the emotional moods of assorted musical pieces (music attitudes). Materials corresponding to each teaching strategy are indicated.

Ragouin, Anne. Learning by Doing: An Illustrated Handbook for Parents and Teachers of Children Who Learn Slowly. Johnstown, PA: Mafex Associates, Inc., 1971.
Education and training programming for mentally retarded children and youth: areas include music and art.

Sun Dial School. Curriculum for the Trainable Mentally Retarded. Fort Lauderdale, FL: Broward County Board of Public Instruction, 1966.
Characteristics of the trainable child, the importance of parent education and an overview of curriculum objectives and educational needs are presented. Objectives, materials and suggested teaching activities for primary and intermediate levels in areas of communication skills, listening and language development, social development, reading, arithmetic, science, music, art, physical education, home economics and workshop and plant nursery experience.

Tulsa Public Schools. Curriculum Suggestions for the Educable Mentally Handicapped Program in Elementary Schools. Tulsa, OK. 1969. ED-ED038805.
Classroom management of educable retardates is discussed; methods and projects in arts and crafts are presented.

FILMS ON ARTS IN EDUCATION FOR MENTALLY RETARDED AND HANDICAPPED

Methods of Teaching Art to the Mentally Retarded - 1967, 33 minutes, $8.90.
Presentation of the six steps in planning and presenting an art lesson by the professor who then takes the role of a special education teacher to illustrate each step.

Out of the Shadows - 1969, 17 minutes, $6.00.
This film demonstrates a special education project with about 50 severely retarded children, none of whom have IQ's above 40. Through a well-organized reinforcement system, these children who otherwise have continued to exist in a custodial environment, learn the motor skills, color perception and the basic speech formation which allow them to participate in regular hospital programs which are geared to the moderately and mildly retarded.

Why Bill Couldn't Learn - 1967, 43 minutes, $6.90.
Techniques and special classrooms used in California public schools for training neurologically handicapped children; special educational needs and how they are met.

AUDIOVISUAL AIDS

Chance to Live (16mm, sound, color, 18 minutes). South Carolina Association for Retarded Children, 1517 Hampton Street, P. O. Box 1564, Columbia, South Carolina.

This film describes the problems facing parents of mentally retarded children and the need for community services, day care centers, developmental centers, sheltered workshops and group homes. The Orange Grove program in Chattanooga, Tennessee is depicted with the focus on programming in South Carolina.

In day care settings, activities that stress socialization, skill development, and parent activities, are described. It is noted that persons are not institutionalized unless community services are not available. In the developmental center setting, the gap between day care and school or workshop is bridged. Much emphasis is given to skill development, habits and use of leisure hours in addition to deinstitutionalization. A sheltered workshop for the blind/mentally retarded is dealt with for meeting individual needs. In halfway houses (community homes) persons learn to live independently socially and economically. Supervision is given by house parents who provide a meaningful home to assist the people in finding a place in the world. Notation is made of services available in South Carolina and the need for emphasis on community services.

IMC/RMC Network Professional Film Collection (second edition). Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091.

The catalog lists and describes 293 films concerning handicapped children which are available from the Instructional Materials Centers and Regional Media Centers' Network; art for exceptional children, autism, behavior management, gifted, disadvantaged, early childhood and preschool, emotionally disturbed, hearing/deaf and hard of hearing, learning disabilities, mentally handicapped, multiple handicapped, physically handicapped, psychology, reading, sight/visually handicapped, special education, speech/speech impaired, teacher training, tests, vocational education, and miscellaneous.

Where Do the Children Play? (16mm, sound, color, 15 minutes). National Association For Retarded Children, 2709 Avenue E East, Arlington, Texas 76011.

Today many severely or profoundly retarded children do not have to be institutionalized--they can live at home if there are sufficient and appropriate services in the community to meet individual and family needs. This documentary stresses the need for community day training programs for such children. In the film the hopes of a young couple are shattered when their first child is diagnosed as profoundly retarded. The option is of community-based services is contrasted with the traditional alternative of institutionalization. Scenes from various day training programs discuss the issue of providing developemental activities such as body identification, self-care, and patterning. The film ends on the question as to where do the children play emphasizing the potential and individuality of each child to reduce or eliminate dehumanization of any group or individual.